OMNII HAND-HELD COMPUTER

(WINDOWS CE 6.0)

USER GUIDE

OMNII HAND-HELD COMPUTER USER GUIDE

(Windows Hand-Held CE 6.0)

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This user manual supports Model Numbers:

- 7545MBW
- 7545MBWM
- 7545MBWP
- FCC ID: GM37545MBW, GM37545MBWM and GM37545MBWP
- IC: 2739D-7545MBW and 2739D-7545MBWP

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Revision History

Changes to the original guide are listed below:

Change	Date	Description
-01 Rev G	03/2014	Motorola rebrand.

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About This Manual

This user manual describes the configuration, operation, and maintenance of the Omnii Hand-Held Computer.

Chapter 1: Basic Operation

describes the steps required to get the Omnii ready for operation.

Chapter 2: Getting To Know Your Omnii

describes Omnii features, including how to charge and maintain the battery, the keyboard features, the display, using the internal scanner, etc. This chapter also describes the Microsoft® Windows® Embedded CE 6.0 desktop, and how to change the appearance and actions of the desktop from Windows Classic Shell to the Kiosk Shell.

Chapter 3: Configuration

describes the programs and applications accessed through two main areas from the Desktop Start Menu: *Programs* and *Settings>Control Panel*. The software includes both Motorola Software Advantage and Microsoft programs, and details how to use them to configure the Omnii, along with scanners/imagers, *Bluetooth*, etc. This chapter also details the Kiosk program, which enables you to customize your computer settings.

Chapter 4: Accessories

describes the peripherals and accessories available for your Omnii computer.

Appendix A: Port Pinouts

describes the Omnii and accessories pinouts.

Appendix B: Imager & Camera Settings

describes in detail your imager's settings.

Appendix C: Scanner Settings

details your barcode options.

Appendix D: Internal Imager & Scanner Specifications

lists the specifications for the Omnii scanners and imagers.

Appendix E: Omnii Specifications

lists the specifications for your Omnii computer, radios, and battery.

Appendix F: Omnii XT15f Freezer Variants

describes the hardware and heating software of the freezer units.

Appendix G: Wireless Wide Area Network (WWAN) Settings

describes WWAN configuration information.

Appendix H: Wireless Zero Config Settings

outlines the steps used to configure your radio using *Windows Zero Config*.

Appendix I: Omnii XT15ni Non-Incendive Safety Guidelines

lists the approvals, important warnings, and cautions for the Omnii XT15ni (non-incendive) Hand-held Computer.

Text Conventions

NOTE Notes highlight additional helpful information.

IMPORTANT These statements provide particularly important instructions or additional information that is critical to the operation of the equipment.

WARNING **These statements provide critical information that may prevent physical injury, equipment damage or data loss.**

Overview of the Omnii Hand-Held Computer

The Omnii Hand-Held Computer is a modular, industrial hand-held computer. A variety of options are available to suit applications in courier/delivery, field service, manufacturing facilities, material handling applications in warehouses, ports and yards, with a focus on real time wireless data transactions. Barcode input methodologies are supported by a variety of available scanners. Optimization for specific operational environments is also supported with a wide range of peripheral options and carrying accessories.

The Omnii XT15f (Freezer Variant) combines modularity, customizability and performance with added technology to resist condensation for use in cold, condensing environments. For details, see Appendix F: “Omnii XT15f Freezer Variants”.

NOTE The Omnii Hand-Held Computer is a body worn device, and to maintain compliance with the FCC RF exposure guidelines, use a Motorola approved carrying case. Use of non-approved accessories may violate FCC RF exposure guidelines.

NOTE For product specifications, refer to Appendix E: “Omnii Specifications”.

Model Variants

- Omnii RT15 Hand-Held Computer (rugged) - Model 7545XC
- Omnii XT15 Hand-Held Computer (extremely rugged) - Model 7545XT
- Omnii XT15f (Freezer Variant) Hand-Held Computer (extremely rugged) - Model 7545XT

Processor and Memory

- Texas Instruments® Sitara AM37xx, ARM Processor 800 MHz (OMAP3® compatible)
- Flash ROM: 1 GB
- RAM: 512 MB
- 3 axis accelerometer

Operating System

- Microsoft® Windows® Embedded CE 6.0

Bundled Applications

- Internet Explorer® 6
- Windows Mobile Device Center
- WordPad®, ActiveSync®

Supported Applications

- Open TekTerm
- Stay-Linked Terminal Emulation
- Naurtech Browser
- Naurtech Terminal Emulation
- NetMotion Mobility XE VPN

Device Management and Utilities

- Kiosk
- Total Recall, TweakIt, Dr. Debug
- Mobile Control Centre (MCC)
  - Easy configuration management and provisioning platform.
  - Powerful remote control and troubleshooting functionality.
  - Integrated real time geofencing and location services.
  - Advanced device security, user authentication and lockdown features.

User Interface

- Colour/Touch Display 9.4 cm (3.7 in) diagonal
  - VGA (640 x 480) Transflective
  - High visibility option: superior sunlight visibility with 165 cd/m2 brightness
  - Extreme Duty option: withstands 1.25 Joule impact, superior low temperature operation (to -20° C/-4° F), with 160 cd/m2 brightness. Better abrasion resistance.
- Touchscreen
  - Passive stylus or finger operation; pan and flick gestures supported
  - Signature capture
- Keyboards
  - Large selection of backlit keypads in both alpha and numeric formats. For a list of currently available keyboard configurations, consult your Motorola representative, or go to: http://www.motorolasolutions.com/US-EN/Product+Lines/Psion/?WT.mc_id=psion_us_p_handheld
- Voice, Audio & Feedback
  - High volume beeper: 95 dBA
  - Integrated microphone and speaker
  - Optional Push-to-Talk Speaker
- Walkie-talkie style Push-to-Talk – VoIP over WiFi or WWAN
- Vibration feedback

Wireless Connectivity

- Integrated *Bluetooth*® V2.0 + EDR
- Integrated 802.11a/b/g/n WiFi
- *Bluetooth*® coexistence
- CCX v4
- Optional SIRF III GPS Receiver
- Optional GPS/GPRS/EDGE WWAN radio
- Optional GPS/GPRS/EDGE with UMTS/HSPA+ WWAN radio

NOTE 802.11b/g and Bluetooth are available simultaneously.

The following figures illustrate the main features of the Omnii — for detailed views, please see “Omnii Features” on page 1-3.

Figure 1 *Omnii XT15 and RT15 Alphanumeric Variants*

Figure 2 *Omnii XT15f Freezer Variants*

Figure 3 *Bottom View (Docking Connector)*

Figure 4 *Top View (Scanner Window)*

Regulatory Labels

Figure 5 *Laser Warning Label*

WARNING **Using controls or adjustments or performing procedures other than those specified herein may result in hazardous radiation exposure.**

This label is affixed below the scanner window.

Figure 6 *SE955 Laser Warning Label*

Figure 7 *SE965 and SE4500 Laser Warning Label*

Figure 8 *LED Radiation Notice Label*

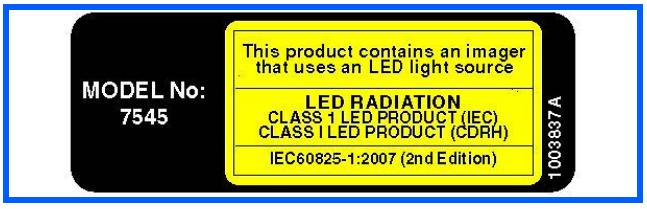

Figure 9 *SE4600 Laser Warning Label*

CHAPTER 1 BASIC OPERATION

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Omnii Features

Figure 1-1 *Front View of the Omnii XT15 Model with Alphanumeric Keyboard*

NOTE The Omnii 55- and 66-key keyboards are equipped with a Power button as shown in Figure 1-1 Front View of the Omnii XT15 Model with Alphanumeric Keyboard on page 1-3.

Figure 1-2 *Side Views of the Omnii XT15*

Figure 1-3 *Bottom View*

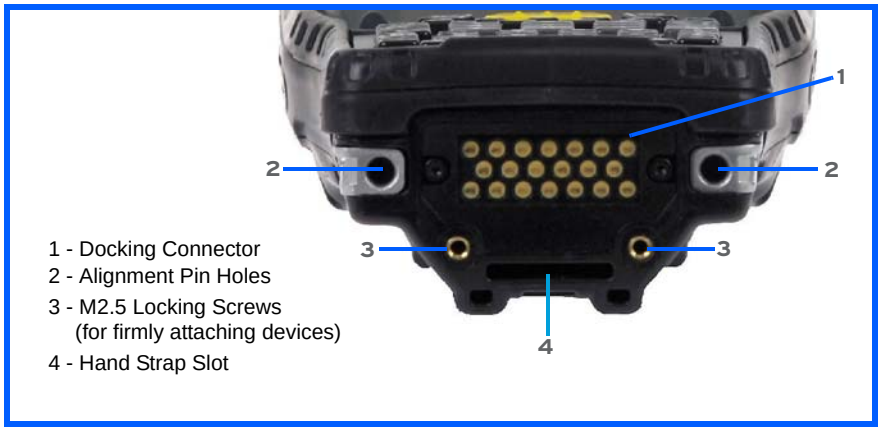
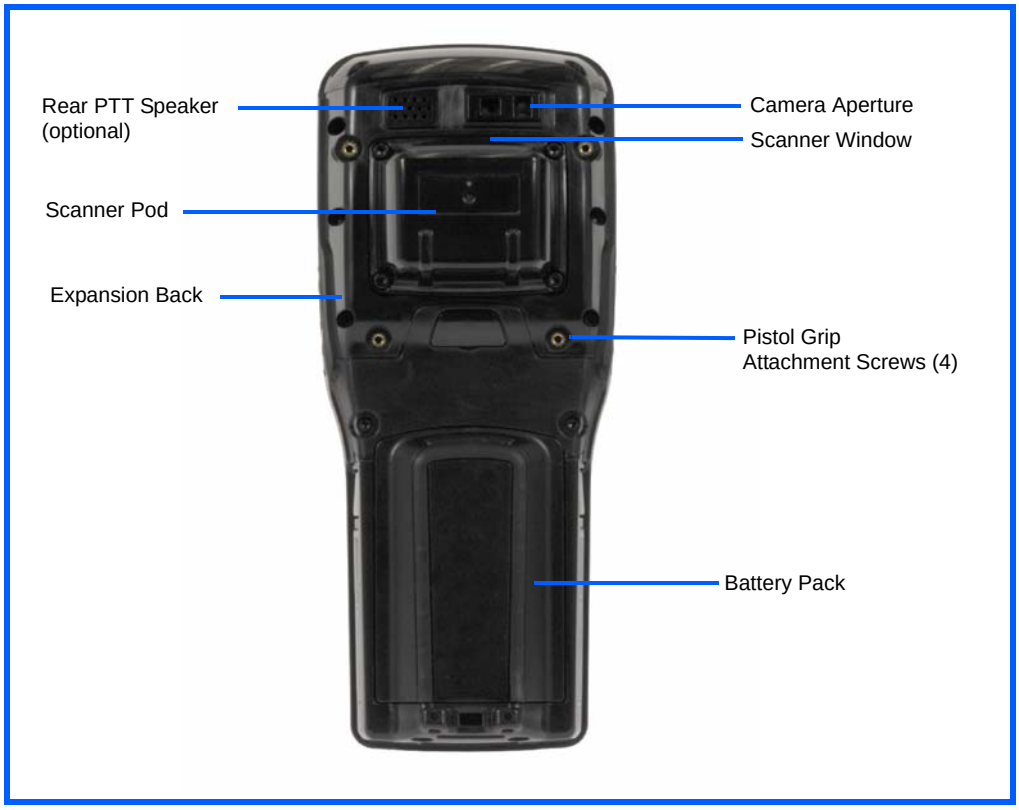


Figure 1-4 *Top View*

Figure 1-5 *Back View*



Omnii Modules Available

To see a current list of Omnii accessories and modules, please go to the Motorola website at:

http://www.motorolasolutions.com/US-EN/Product+Lines/Psion/?WT.mc_id=psion_us_p_handheld

Documents Available

To see a current list of documents and download what you need, please go to the Knowledge Base on the Motorola IngenuityWorking community website:

http://community.psion.com/knowledge/w/knowledgebase/product-manuals.aspx

Preparing the Omnii for Operation

The Battery

The Omnii is powered by a Lithium-ion Smart Battery pack, 5000 mAh — Model ST3001.

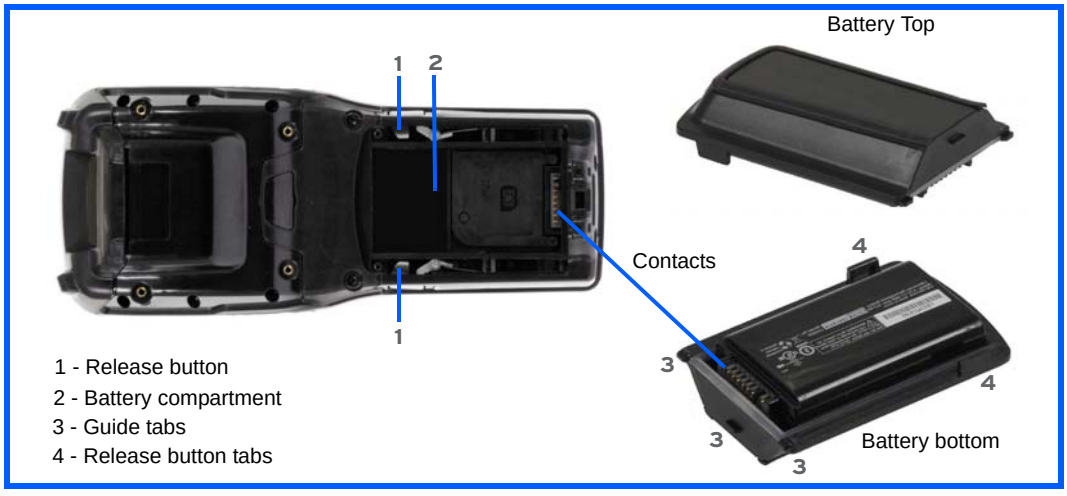
IMPORTANT Before charging the battery, it is critical that you review the battery safety guidelines in the Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191).

Battery packs shipped from the factory are charged to approximately 40% and must be fully charged prior to use. Batteries can be charged using a variety of chargers and docking stations. For detailed information, see “Battery Details” on page 2-3.

Replacing the Battery Pack

IMPORTANT Always switch the unit off before changing the battery (see “Switching the Omnii On and Off” on page 1-7). However, assuming the default power saving parameters and battery reserve level have not been altered, battery swap time is a minimum of 4 minutes — you will not lose data if the battery is replaced within this time frame.

Figure 1-6 *Omnii Battery*



NOTE If you are using a docking station or an external power supply, you can insert an uncharged battery and use the device while the battery charges.

Assuming the default power saving parameters and battery reserve level have not been altered, a battery can be removed for up to 4 minutes without losing data. After 4 minutes the terminal may reboot.

Removing the Battery Pack

- If your unit is equipped with a hand strap, unhook it from the base of the battery.
- Press the two buttons at the sides of the compartment simultaneously, and slide the battery out.

Installing the Battery Pack

- Slide the charged battery with the contoured plastic facing you into the unit with the contacts matching position and the guide tabs moving into the corresponding slots at the base of the compartment. Click both sides of the battery into place.
- If your computer is equipped with a hand strap, re-attach the clip to the slot at the base of the battery.
- Switch the unit on (see “Switching the Omnii On and Off” on page 1-7).

Switching the Omnii On and Off

Follow the instructions below for your Omnii. If your keyboard has a power button (55- and 66-key keyboards only), press that instead of the **[FN]**+**[Enter/Power]** key combinations described.

Switching the Omnii On

- Press and hold down the **[Enter/Power]** key for at least one second.

When the unit is turned off, normally it automatically enters a power-saving, “suspend” state. When the Omnii is switched on from the suspend state, within a few seconds operation resumes in the screen in which you were working prior to turning the computer off.

IMPORTANT

If your Omnii fails to power up, consider the following troubleshooting options:

The battery may be overheated (>60C°), a non-Motorola battery may be installed, or the battery may have fallen below the configured Suspend Threshold. See “Suspend Threshold and Estimated Battery Backup” on page 3-45 for details.

To switch on the hand-held, you will need to replace the overheated battery.

However, if you supply AC power to the Omnii with a battery that falls below the configured Suspend Threshold, the unit will switch on.

Switching the Omnii Off

- To switch off the Omnii, press the **[FN]** key and then press and release the **[Enter/Power]** button. The Omnii will automatically enter the *Suspend* state.

IMPORTANT

Turning off the hand-held does not result in a complete shutdown; rather, the unit enters a power-saving, “suspend” state. When the Omnii is turned on from suspend state, operation resumes within a few seconds.

IMPORTANT If the word 'FN' is displayed underlined in the taskbar area at the bottom of the screen, this key is locked "on" and the Omnii will not switch off. Press the [FN] key twice followed by [Enter/Power] to switch the Omnii off.

However, if you've set the mode to "Lock" (see "Keyboard One Shot Modes" on page 3-34), the Omnii can be turned off even when the [FN] key is locked 'on'.

Resetting the Omnii

To perform a warm or cold reset, you can access the menu by going to *Start>Shutdown*. Alternatively you can use the keyboard shortcuts described below.

NOTE If your Desktop is switched to the Kiosk Shell (refer to "The Kiosk Desktop Shell" on page 2-27), resetting the unit is done solely by use of the keyboard shortcuts.

Performing a Warm Reset

During a *warm reset*, running programs are halted. The contents of the file system, RAM Disk, Flash Disk, and the registry are preserved.

- Press and hold down the **[FN]** key and the **[Enter/Power]** key simultaneously for a minimum of four seconds.

NOTE You need to reset your Omnii after configuring the radio by switching between Windows Zero Config and WiFi Config.

Performing a Cold Reset

A *cold reset* reinitializes all hardware. All RAM including the RAM Disk is erased. Non-volatile storage such as the Flash Disk is preserved, as is the file system.

To execute a cold reset:

- Press and hold down the **[SYM]** key, the **[FN]** key, and the **[Enter/Power]** key, simultaneously for a minimum of four seconds.

NOTE As part of the normal Windows Embedded CE cold boot process, the screen may go blank for a few seconds after the splash screen loading bar reaches the end. The desktop is displayed after a few moments.

Performing a Clean Start

A *clean start* returns the Omnii to factory settings, flushes the registry keys, and deletes volatile storage and the file system. The Flash Disk is preserved.

- Press and hold down the **[FN]** key, the **[Enter/Power]** button and the **[SCAN]** key simultaneously for a minimum of six seconds.

The Omnii displays the Boot to BooSt menu.

- On an *alpha keyboard*, type **.clean**.
- On a *numeric keyboard*, type **.25326**.

Boot to BooSt

If you choose Boot to BooSt, the BooSt menu is loaded.

- Press and hold down the **[FN]** key, the **[Enter/Power]** button and the **[SCAN]** key for a minimum of four seconds.
- Press **[1]** to launch the *OS*.

Performing a Hard Reset

IMPORTANT This procedure is recommended as a last resort, when all other methods fail.

To execute a hard reset:

- Remove the battery.
- Using a coin, or other conductive item, connect pins 5 and 6 of the battery contacts for at least six seconds.

- Replace the battery and power Omnii on. The terminal will boot as if from a cold reset.

Attaching Carrying Accessories

Motorola recommends that a carrying accessory — a hand strap — be installed on the Omnii before use. For detailed information, please see “Carrying and Protective Accessories” on page 4-4.

Calibrating the Touchscreen

NOTE The touchscreen function can be turned off (see “Touch” on page 3-67).

The Omnii touchscreen feature is factory-calibrated and ready-to-go; however, over time the touchscreen's operating parameters may change, and it may need to be recalibrated for correct operation. Refer to “Calibrating the Touchscreen” on page 2-10 for details.

Imager and Scanner Options

If your Omnii is equipped with an internal imager or scanner, please review the relevant sections: Appendix B: “Imager & Camera Settings” and Appendix C: “Scanner Settings” for details.

Appendix B: “Imager & Camera Settings” lists their current model numbers, descriptions, and specifications.

Connectivity

For information on connecting the Omnii to a PC, please refer to “Data Transfer between Omnii and a PC” on page 3-22.

The Omnii contains an integrated 802.11a/b/g/n radio module. The *Wi-Fi Config* application is used to configure the radio for one or more wireless network profiles. To configure the radio, follow the steps outlined under the heading “Wi-Fi Config” on page 3-80.

To configure your *Bluetooth* settings, please go to “Bluetooth® Setup” on page 3-11.

If you have a GPS (Global Positioning System) module, you can choose from a set of GPS profiles built into the modem and set up AGPS (Assisted Global Positioning System). See “GPS (Global Positioning System) Settings” on page 3-27.

The Omnii is available with one of the following Wireless WAN radio options: the Cinterion MC75i EDGE and the Cinterion PH8-P HSPA+. See Appendix E: “Omnii Specifications” for full specifications. With either of these radios and a SIM card, you can wirelessly transfer data (see Appendix G: “Wireless Wide Area Network (WWAN) Settings”), and you can use the Omnii voice option to place phone calls (see “Voice Communication” on page 1-11 below).

To see the radio specifications, please go to “Wireless Radios” on page E-6.

Data Transfer

Data transfer options vary slightly depending on the type of operating system installed in your PC. Various options exist depending on whether you are using Windows XP or earlier, Windows Vista®, Windows 7 or later. For connection details, please refer to “Data Transfer between Omnii and a PC” on page 3-22.

Voice Communication

If the MC75i EDGE or the Cinterion PH8-P HSPA+ WWAN radio modem is installed and enabled, the *Phone icon* and the *GSM signal strength icon* will appear automatically on the taskbar. For details on using your Voice options, please refer to “Voice – Using the WWAN Phone Dialer” on page 3-74.

NOTE The voice option is not available in North America for the MC75i EDGE radio.

CHAPTER 2 GETTING TO KNOW YOUR OMNII

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Operating System

- Microsoft® Windows® Embedded CE 6.0

Battery Details

Omnii Hand-Held Computers are powered by a lithium-ion battery pack, Model ST3001.

Please see the following sections for detailed battery information:

- Installation: “Preparing the Omnii for Operation” on page 1-6.
- Calibration and power settings: “Power Properties” on page 3-44.
- Chargers and docking stations: Chapter 4: “Accessories”.
- Specifications: “Lithium-ion Smart Battery 5000 mAh (ST3001)” on page E-5.
- Contact pinout: “Omnii Battery Contacts” on page A-6.

Battery Safety

IMPORTANT Before attempting to install, use, or charge the battery pack, it is critical that you review and follow the important safety guidelines in the quick reference guide entitled the Omnii Hand-Held Computer Regulatory & Warranty Guide, PN 8000191.

Battery Swap Time

Assuming the default power saving parameters and battery reserve level have not been altered, battery swap time is a minimum of 4 minutes — you will not lose data if the battery is replaced within this time frame.

To protect data, the safest place to store data is on a microSD memory card or externally to the device on a USB memory stick or on a PC. You can also save data in the “Flash Disk” partition of the file system.

Refer to “Suspend Threshold and Estimated Battery Backup” on page 3-45 for details about reserving battery power for data backup purposes.

The *Suspend Threshold* adjustment in the *Power Properties* tab allows you to determine the battery capacity at which the Omnii will be shut down. If left at the default value, *Maximum Operating Time*, the unit will run until the battery is completely empty; the RAM is only backed up for a short period of time. If you choose *Maximum Backup Time*, the Omnii shuts off with more energy left in the battery so RAM can be backed up for a longer period of time.

IMPORTANT

If your Omnii fails to power up, consider the following troubleshooting options:

The battery may be overheated (>60C°), a non-Motorola battery may be installed, or the battery may have fallen below the configured Suspend Threshold. See “Suspend Threshold and Estimated Battery Backup” on page 3-45 for details.

To switch on the hand-held, you will need to replace the overheated battery.

However, if you supply AC power to the Omnii with a battery that falls below the configured Suspend Threshold, the unit will switch on.

Charging the Battery

Batteries shipped from the factory are charged to approximately 40% of capacity. Lithium-ion battery packs must be fully charged before use. These batteries can be charged with a variety of chargers and docking stations. For detailed information on these accessories, please see Chapter 4: “Accessories”.

Normally it takes 3 to 4 hours to charge a battery. The Omnii intelligent charging system protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.

% Charge Completed	During Sleep Mode	While Operating
100%	4 hrs.	8 hrs.
75%	2 hrs.	6 hrs.

IMPORTANT

To avoid damaging the battery, chargers will not begin the charge process until the battery temperature is between 0°C to 40°C (32°F to 104°F).

The Keyboard

The Omnii offers a wide variety of Alpha and Numeric keyboard layouts.

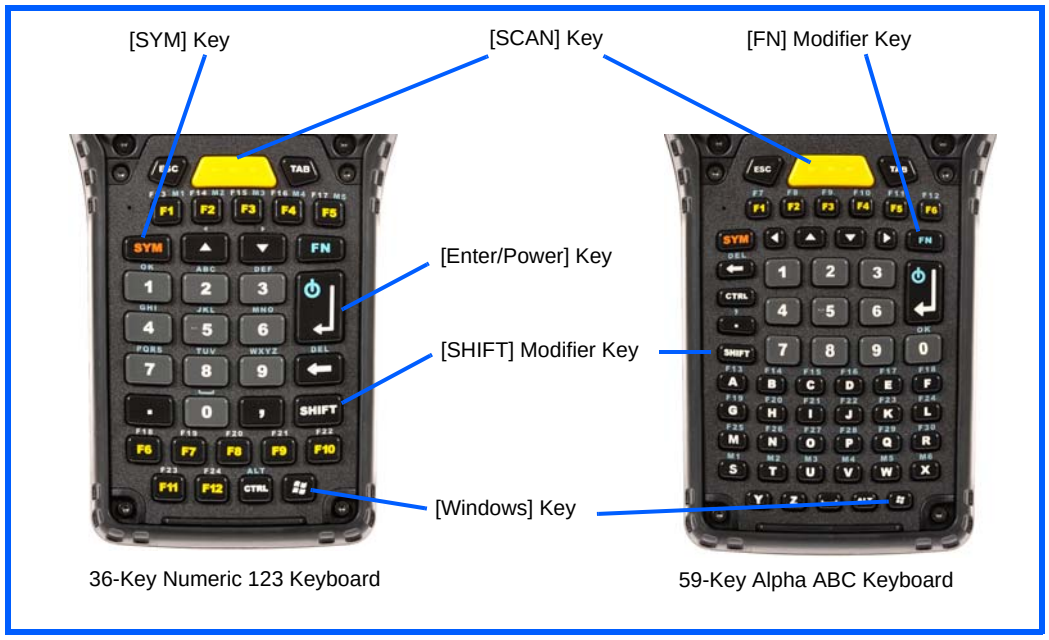
See http://www.motorolasolutions.com/US-EN/Product+Lines/Psion/?WT.mc_id=psion_us_p_handheld for a list of available configurations. Most of the keys on these keyboards operate much like a desktop computer. Where a key or key function is not consistent with the PC keyboard, those differences are described in the following sections.

The Omnii is equipped with either an [Enter/Power] key or Power button (55- and 66-key keyboards only) that allows you to switch the unit on and to shut down the unit to *Suspend* mode. For details refer to “Switching the Omnii On and Off” on page 1-7.

There are a number of modifier keys that provide access to additional keys and system functions, as described in “Modifier Keys” on page 2-6.

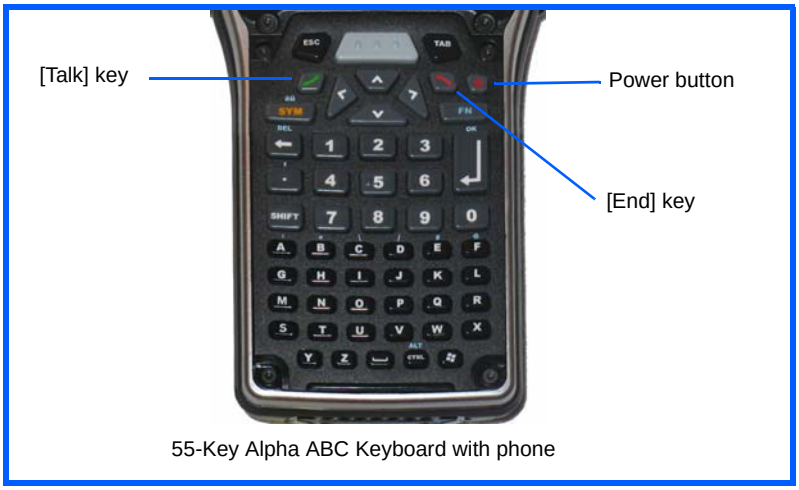
The [Blue/FN] modifier key provides access to additional keys and system functions. These functions are colour coded in blue print above the keyboard keys.

Figure 2-1 *Keyboard Layouts*



The Power Button (55-Key and 66-Key Keyboards only)

The [Power] button in the upper right corner of the keyboard switches the unit on and off.



Regular Keys

The [Enter] Key

The [Enter] key is used to execute the usual Enter keyboard functions, and on some units to also power the unit on and off (for details refer to "Switching the Omnii On and Off" on page 1-7).

NOTE 55-key and 66-key keyboards are equipped with a Power button. For these keyboards, the [Enter] key does not switch the unit on or off.

The [SHIFT] Key

The [SHIFT] key is used to display uppercase alpha characters and to provide access to other symbols and functions on the numeric keyboards. Press the [SHIFT] key to turn the shift state 'on' (it will be represented by an up arrow in the taskbar), then press another key to access the shifted function of that key.

Press the [SHIFT] key twice to lock the shift state on (the up arrow in the taskbar will be underlined). Press [SHIFT] again to turn the shift state off.

To access CAPS LOCK mode, press **[FN]** + **[SHIFT]**. In this state, if you press a numeric key, the number is displayed rather than the normal shifted function of that key. Press **[FN]** + **[SHIFT]** again to turn the CAPS LOCK mode off.

The Arrow Keys

The [Arrow] keys are located near the top of the keyboard, and are represented on the keyboard as triangles pointing in different directions. The [Arrow] keys move the cursor around the screen in the direction of the arrow: up, down, left and right. The left arrow key should not be confused with the [BACKSPACE] key which is depicted as a left arrow. The cursor is the flashing box or underline character that indicates where the next character you type will appear.

The [BACKSPACE/DEL] Key

The [BACKSPACE] key (represented on the keyboard as an arrow pointing left) moves the cursor one character to the left, erasing the previous key stroke.

The [DEL] key ([FN] +[BACKSPACE]) erases the character at the current cursor position.

The [CTRL] and [ALT] Keys

The [CTRL] and [ALT] keys modify the function of the next key pressed and are application dependent. Pressing either key twice locks it 'on' (it appears underlined on the Taskbar). Pressing the key once again unlocks it.

The [TAB] Key

Typically, the [TAB] key moves the cursor to the next field to the right or downward.

The [ESC] Key

Generally, this key is used as a keyboard shortcut to close the current menu, dialog box, or activity.

The [SPACE] Key

The [SPACE] key is represented on the keyboard by a long, low horizontal line contained by a small vertical line on each side. Pressing this key inserts a blank space between characters. In a Windows dialog box, pressing the [SPACE] key enables or disables a check box.

The [SCAN] Key

The Omnii is equipped with a single [SCAN] key on the keyboard and an extra [SCAN] button located on the left side of the unit. [SCAN] keys activate the scanner beam. For units that do not have internal scanners, these keys can be remapped to serve other functions.

Modifier Keys

The [SHIFT], [CTRL], [ALT], [FN] and [SYM] keys are modifier keys that change the function of the next key pressed.

The [SHIFT], [CTRL] and [ALT] keys operate much like a desktop keyboard except that they are not chorded (two keys held down simultaneously). The modifier key must be pressed first followed by the key whose function you want modified.

[SHIFT] and [FN]

The [SHIFT] and [FN] modifier keys provide access to additional keys and system functions. The functions related to these modifier keys are colour-coded in white and blue print respectively above the keyboard keys, dependant on your keyboard format.

[SYM]

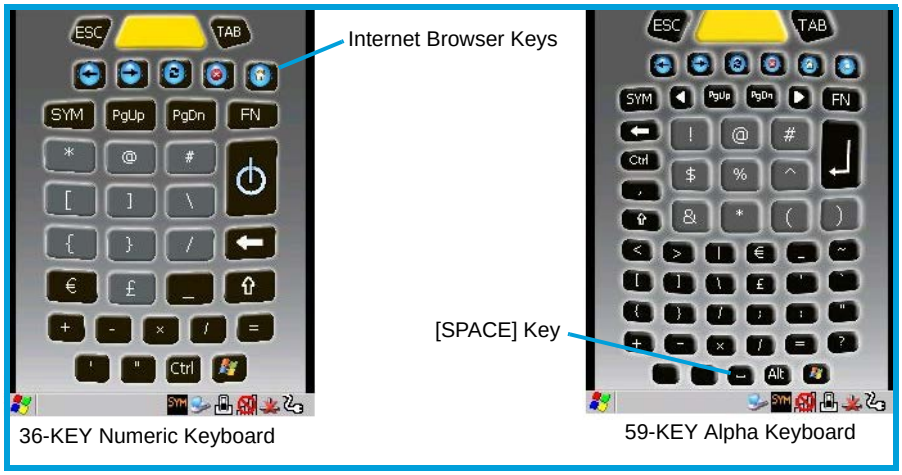
NOTE When using the Mobile Devices SDK Developers' Guide (PN 8100016), note that the [SYM] key is interchangeable with the [ORANGE] key.

The Symbol [SYM] modifier key is represented on the keyboard by the characters SYM and provides access to commonly used symbolic characters. Pressing the key brings up the Symbol soft input panel (SIP) onscreen keyboard, with symbols mapped to each key. If you wish to adjust the settings for the pop-up screen (e.g. time of delay before screen appears, etc.), modify the file *softinputpanel.xml*, located in the Windows folder.

NOTE Modifier keys are remapped in Control Panel, and the Symbol SIP will automatically show and use the new mappings after the next reboot.

The onscreen keyboard corresponds to the specific keyboard on your Omnii — either numeric or alphanumeric.

Figure 2-2 *Symbol Soft Input Panels*



Activating Modifier Keys

When a modifier key is pressed, it is shown in the softkey bar at the bottom of the screen, making it easier to determine whether a modifier key is active. For example, if the [CTRL] key is pressed, **Ctrl** is displayed at the bottom of the unit screen. Once the next key is pressed, the modifier key becomes inactive and disappears from the taskbar.

Locking Modifier Keys

When a modifier key is pressed twice, it is locked on. A locked modifier key is displayed in underlined letters in the taskbar. For example, pressing the [FN] key twice locks it on — it is displayed as an underlined blue FN in the taskbar at the bottom of the computer screen. The same is true of the [SYM] key, which is shown as an underlined orange SYM in the taskbar.

The locked modifier key will remain active until it is pressed a third time to unlock or turn it off. Once a modifier key is unlocked, the underline representation at the bottom of the screen is no longer displayed.

NOTE The locking function of the modifier keys can be changed so that pressing a key **once** will lock the key on.

If you disable the One Shot function of the key, pressing it once will lock the key on. Pressing the same key a second time will unlock or turn it off. Refer to "Keyboard One Shot Modes" on page 3-34 for details.

Function Keys and Macro Keys

In addition to the standard keyboard functions (see "The Keyboard" on page 2-4), the Omnii supports function keys and macro keys.

All function keys and macro keys can be custom defined for each application. The Open TekTerm application utilizes these keys (for detailed information, see the *Open TekTerm Software User Manual*, PN 8000073).

Function Keys

Function keys perform special, custom-defined functions within an application. These keys are accessed by pressing one of the dedicated function keys on the keyboard, or through the appropriate [SHIFT] or [FN] key sequence, depending on the keyboard variant being used.

Alphanumeric Keyboard Function Keys

The Alphanumeric keyboards are equipped with up to thirty function keys, including those function keys that are colour-coded in blue print above the alpha keys or function keys (depending on your keyboard).

To access the blue function keys, press the [FN] key followed by the appropriate alpha or function key.

Function keys [F1] through [F24] can be used with the Windows Embedded CE operating system or another application. The additional function keys, [F25] through [F30] along with the macros, are not used as part of the Windows Embedded CE operating system.

Numeric Keyboard Function Keys

The Numeric keyboards are equipped with up to 24 function keys, including those function keys that are colour-coded in white print above the function keys. Function keys F25 through F30 can only be accessed by remapping another key to that function.

To access the white function keys, press the **[SHIFT]** key followed by the appropriate function key.

Macro Keys

IMPORTANT Refer to "Keyboard Macro Keys" on page 3-35 for details about creating macros.

Several of the Omnii keyboards are equipped with a series of macro keys that can be programmed to replace frequently used keystrokes, along with the function of executable keys like the [Enter/Power] key, the [BACKSPACE] key, any function key and arrow key, etc.

59-Key Alphanumeric Keyboard Macro Keys

These keyboards have six macro keys: [M1] to [M6], located on the S to X keys (second-last row of keys).

To access a macro key, press the [FN] key followed by the macro key.

36-Key Numeric Keyboard Macro Keys

These keyboards are equipped with five macro keys: [M1] to [M5]. These keys are colour coded in blue print above function keys [F1] to [F5].

To access a macro key, press the **[FN]** key followed by the macro key.

Numeric Keyboards — Accessing Alpha Keys

On the Numeric Omnii keyboards, all alphabetic characters are printed on the unit plastic in blue typeface above the keys. Alpha characters are accessed by pressing the [FN] modifier key, then pressing another key on the keyboard.

The Alpha Modified Numeric 789 keyboard has each blue alphabetic character assigned as a single [FN]-shifted character on individual keys. An indicator in the left corner of the taskbar displays the currently selected character.

The Numeric 123 keyboards have telephone-style alphabetic keys, with the blue alphabetic characters located in groups of 3 or 4 above each of the numeric keys. To access characters on these keyboards, a few extra steps are needed, as described below.

Choosing a Single Alpha Character

NOTE The following examples assume that the [FN] key is enabled as Lock mode in the One Shot screen (accessible through the Control Panel Keyboard icon). In Lock mode, pressing the [FN] key once locks it on. Refer to “Keyboard One Shot Modes” on page 3-34 for details.

The examples below illustrate how to access A, B and C, all of which are printed in blue characters above the numeric key [2]. The letters you choose appear in the softkey bar as you press the numeric key, providing a visual indicator of which letter will be displayed on the screen.

To choose the letter a:

- Press the **[FN]** key, and press the numeric key **[2]**.
- Press the **[FN]** key again to unlock or turn it off.

To choose the letter b:

- Press the **[FN]** key, and press **[2]** twice.
- Press the **[FN]** key again to unlock or turn it off.

To choose the letter c:

- Press the **[FN]** key, and press **[2]** three times.
- Press the **[FN]** key again to unlock or turn it off.

NOTE Keep in mind that there is a timeout of one second between key presses when sequencing through the alphabetic characters on a key. If you pause longer than one second between key presses, the alphabetic character that is displayed at that time will be entered.

Selecting Uppercase Letters

To display a single capital letter, press the **[SHIFT]** key first, then the letter you want.

To access CAPS LOCK mode, press **[FN]** + **[SHIFT]**. In this state, if you press a numeric key, the number is displayed rather than the normal shifted function of that key. Press **[FN]** + **[SHIFT]** again to turn the CAPS LOCK mode off.

The Keypad Backlight

The intensity of the keypad backlight and the conditions under which this backlight is activated can be configured using the *Keyboard* icon in the Windows Embedded CE *Control Panel*. The behaviour of the keypad backlight is tailored in the *Keyboard Properties* dialog box. Refer to "Keyboard Backlight" on page 3-33 for details about this option.

NOTE Keep in mind that this option may be restricted to supervisory use only.

The Display

The Omnii is equipped with display backlighting to improve character visibility in low light conditions. The backlight switches on when a key is pressed.

Adjusting the Display Backlight

The behaviour of the display backlight and the intensity of the backlight can be specified in the *Display Properties* dialog box in the *Control Panel*.

NOTE Refer to *"Backlight" on page 3-24* for details about the Display Properties dialog box.

Calibrating the Touchscreen

If your Omnii touchscreen has never been calibrated, or if you find that the stylus pointer is not accurate when you tap on an item, use the *Stylus Properties* dialog box in the *Control Panel* to recalibrate the screen.

- In the *Control Panel*, choose the **Stylus** icon to display the *Stylus Properties* window.

- Select the **Calibration** tab, and then choose the **Recalibrate** button.

- Follow the directions on the calibration screen to calibrate the screen.

Indicators

The Omnii uses LEDs (Light Emitting Diodes), onscreen messages, vibrations, and audio tones as indicators.

LEDs

The Omnii is equipped with four coloured LEDs. This section outlines what these LEDs indicate.

IMPORTANT If an LED is illuminated in red, the operator should be cautious as this generally indicates an abnormal operating condition or active laser emission.

Figure 2-3 *LED Status Indicators*

Battery Charge Status LED

The far left LED is reserved for battery charge status. This indicator is active even when the hand-held is inserted in a docking station (and in suspend mode) so that the charge status of the battery can be detected easily.

Charge LED Behaviour	Function
OFF	External power not detected.
Solid Green	Battery charging complete.
Flashing Green	Charge in progress.
Yellow	Cell temperature out of range for charge.
Solid Red	Unable to charge battery.

Operating System Status LED

The second LED indicates system notifications and operating system status. It is also available for user-loaded custom Windows Embedded CE applications.

Operating LED Behaviour	Function
OFF when unit is in Suspend or Shutdown.	Normal operating status.
Solid Yellow	The unit is powering on.
Fast Flashing Yellow	The unit is entering Suspend mode.
Flashing Yellow	This LED is controlled by the Microsoft NLED api.

Radio Status LED

The third LED from the left indicates that the GPS radio is enabled or that the WWAN radio is enabled.

Radio Traffic LED Behaviour	Function
OFF	The radio is disabled.
Slow Flashing Blue	The radio is enabled and active.

Scanner Status LED

The fourth (far right) LED indicates scanner status.

Scan LED Behaviour	Function
OFF	The scanner is not in use.
Solid Red during scan	Scan in progress.
Solid Green after decode OFF when scan ended	Successful scan.
Flashing Red	Unsuccessful scan.

Onscreen Indicators

The taskbar at the bottom of the screen displays a variety of system status indicators, including the Input Panel button if you have chosen to show that option in the *Taskbar and Start Menu* settings.

Figure 2-4 *Taskbar*

The taskbar changes dynamically, and only those icons that are applicable are displayed. For example, if a radio is not installed in your Omnii, the radio signal icon is not displayed in the taskbar.

Windows® Start Button

If you are using the touchscreen, you can either tap the Windows icon at the bottom left of the screen, or press the [Windows] key to display the Start Menu, and then tap on the desired application.

Modifier Key Indicators

[SHIFT], [CTRL], [ALT], [FN] and [SYM] are modifier keys that have onscreen indicators to show when a key is active or locked. If a modifier key is pressed once to activate it, the key is displayed in the taskbar, for example, pressing the [FN] key once displays FN in the taskbar. If a modifier key is pressed twice, it is locked on and the onscreen indicator is displayed with underlined letters in the taskbar, for example, pressing [FN] twice displays FN in the taskbar.

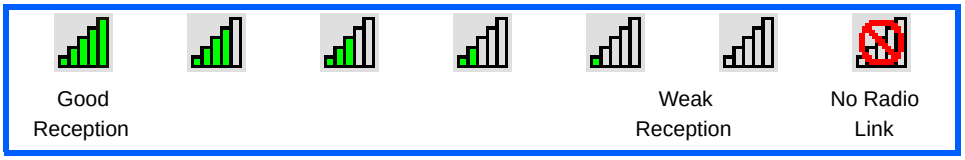
Power

The battery shaped icon displayed in the taskbar provides quick access to the charge state of the battery. Tapping on the icon once will show the percentage charge left in the battery. Tapping on the icon twice opens the *Power Properties* menus (see “Power Properties” on page 3-44), where you can set the low battery warnings levels, and time to enter Suspend.

If the Omnii is using external AC power, an AC icon is displayed in the taskbar.

802.11 Radio Signal Quality

Increasing radio signal quality is represented by longer, filled bars within this icon.

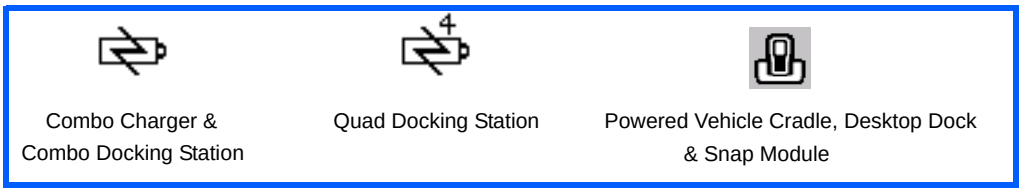


WWAN Radio Signal Quality

Wireless WAN icons in the taskbar indicate the status of your wide area network connection. For details, see “Taskbar Icons” on page G-3.

Docking Device

When a hand-held is inserted in a docking station, charger or cradle, an associated icon appears in the taskbar.



***Bluetooth* Radio**

This icon displayed in the taskbar represents the installed *Bluetooth* radio.

Input Panel

You can tap the Input Panel icon to activate the soft keyboard application.

Audio Indicators

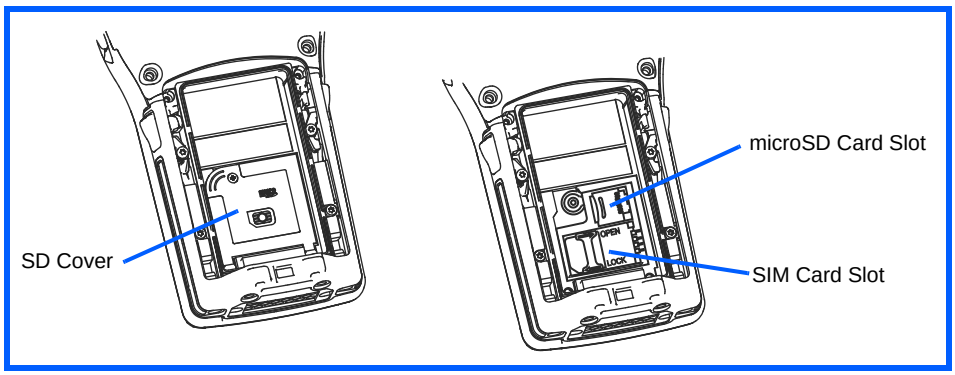
The Omnii supports several audio options, including *Bluetooth*. The optional rear speaker can be used for system (Windows) sounds and *.wav* files. When a rear speaker is absent, those sounds are routed to the front receiver. The beeper provides a variety of sounds and can be configured to emit a sound when a key is pressed, a keyboard character is rejected, scan input is accepted or rejected, an operator's entry does not match in a match field or the battery is low. The volume rocker button is located on the left side of the hand-held. Information on configuring sounds is detailed in "Volume & Sounds Properties" on page 3-79.

Vibrations

You can set the Omnii to vibrate when a successful or unsuccessful barcode scan is performed. See "Scanners" on page 3-55.

Inserting the microSD Card and SIM Card

There are two slots available in the battery compartment — the lower slot is provided for a *microSD* (Secure Digital) card, which provides additional non-volatile memory to your Omnii, and the upper slot is for a *SIM* (Subscriber Identity Module) card, which allows access to the Voice option, access to the Internet, and so on.



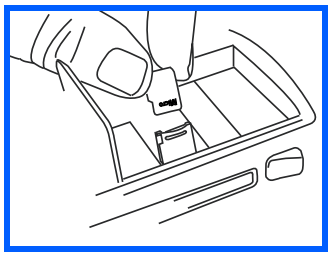
Inserting the Cards

- Switch off the power to the Omnii.
- Remove the battery.

- Use a Phillips screwdriver to remove the SD cover screw. Flip the cover open or remove it.

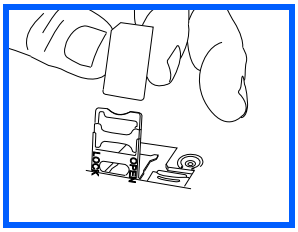
For a microSD card:

- Slide the microSD card door to the left to unlock it. Flip it open.
- Slide the microSD card into the guides on the SD card door.
- Close the microSD card door, and slide it to the right to lock it.



For a SIM card:

- Slide the SIM card metal door latch to the right to unlock it, then flip the door open.
- Slide the card into the guides on the SIM card door.
- Swing the hinged door back down into place, and slide the metal door latch to the left to lock it.



Scanners and Imagers

IMPORTANT It is critical that you review the “Laser Warnings” in the Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191) before using any of the scanners described in this chapter.

For detailed scanner specifications and decode zone tables, refer to Appendix D: “Internal Imager & Scanner Specifications”.

NOTE To enable a newly-installed imager or scanner, press and hold down the ***[FN]*** key and the ***[Enter/Power]*** key simultaneously for a minimum of three seconds.

If your unit has a [Power] button, press and hold down the ***[FN]*** key and the ***[Power]*** button for a minimum of three seconds.

The Omnii supports a wide range of scanner options to address a variety of user application requirements. Refer to the following sections for detailed information:

- Scanner list and specifications: Appendix D: “Internal Imager & Scanner Specifications”.
- Configuration: “Scanners” on page 3-55 and “Manage Triggers” on page 3-40.
- “Scanning Techniques” on page 2-16 outlines the mechanics of a successful scan.

- "Scanner Status LED, Sounds, and Vibrations" on page 2-17 details how to interpret whether or not a barcode has been successfully scanned.
- Barcode Parameters: Appendix C: "Scanner Settings".
- Imager Settings: Appendix B: "Imager & Camera Settings".
- "Troubleshooting" on page 2-17 provides some helpful suggestions should the scan fail.

Scanner types include:

- Long Range: reads large 1D barcodes (55 mil) at long distances (up to 3m).
- Standard Range/High Performance: reads damaged or low contrast regular 1D barcodes (5 - 55mil) at medium distances (up to 1m).
- Extended Range: reads regular 1D barcodes (5 - 55mil) at short to medium distances (1m), as well as large 1D barcodes (e.g. 55 mil) at long distances.
- 1D Imager: reads regular 1D and PDF417 barcodes at short to medium distances.
- EA11 2D imager: reads 1D and 2D barcodes including damaged and low contrast regular 1D barcodes; smallest barcode at 5 mil with a minimum read distance to 2.8 in. / maximum read distance of 5.1 in.; largest barcode at 40 mil with a minimum read distance of 3.1 in. / maximum distance of 32.4 in.
- EA20X 2D imager: reads 1D and 2D barcodes including damaged and low contrast regular 1D barcodes; shortest barcode at 6 mil with a minimum read distance of 6.1 inches / maximum read distance of 9.1 inches; longest barcode at 40 mil with a minimum read distance of 5.1 inches / maximum read distance of 49.2 inches.
- SE4600LR imager: captures digital images for transmission to a decoder to decode a barcode of any format supported by the decoding software. Uses laser aiming, LED illumination, and CMOS sensors to capture barcode images over an extended range and under a wide variety of lighting conditions.

Basic Scanner Operations

- Turn the hand-held on. Wait until the unit has booted up completely.
- Aim at the barcode and press the scan key or the trigger. A scan beam and a warning indicator appear until a successful decode is achieved or six seconds have elapsed.

Scanning Techniques

- Hold the scanner at an angle. Do not hold it perpendicular to the barcode.
- Do not hold the scanner directly over the barcode. In this position, light can reflect back into the scanner exit window and prevent a successful decode.
- Scan the entire barcode. If you are using a 1D or PDF laser scanner, make certain that the scan beam crosses every bar and space on the barcode, including the margins on either end of the symbol.
- If you are using a 2D imaging scanner, make certain the red, oval shaped framing mark is centered within the barcode you want to scan.
- When using imaging scanners, do not move the scanner while decoding the barcode. Movement blurs the image.
- Hold the scanner farther away for larger barcodes.
- Hold the scanner closer for barcodes with bars that are close together.

Scanner Status LED, Sounds, and Vibrations

The scanner LED (the far right LED) indicates whether or not your scan is successful. The LED behaves as follows:

- Scan In Progress: scan LED displays solid red colour.
- Successful Scan: scan LED displays solid green colour and turns off when the scan is ended.
- Unsuccessful scan: scan LED flashes red.

A barcode icon appears on the screen during a scan. While the scanner beam is active, the onscreen message states: SCANNING. If you want to turn off the onscreen message, disable the “Scan Indicator” parameter in the *Control Panel>Scanners>Options>Display menu*.

When the scan is successful, the barcode data is displayed on the screen until the scan button (or pistol trigger) is released, but only if the “Scan Result” parameter is turned on in the *Control Panel>Scanners>Options>Display menu*.

You can also enable sounds and vibrations to indicate good and bad scans by enabling those options in the *Control Panel>Scanners>Options>Display menu*.

Troubleshooting

If the scanner is not working, investigate the following:

- Is the unit on?
- Check that the barcode symbology being scanned is enabled for the hand-held you are using. Check any other parameters that affect the scanning procedure or the barcode.
- Check the barcode to make sure it is not damaged. Try scanning a different barcode to verify that the problem is not with the barcode.
- Check that the barcode is within the proper range.
- Does the hand-held display the warning without scanning? This suggests a hardware problem in the hand-held.
- Is the laser beam scanning across the barcode?
- Once the scan beam has stopped, check the scanner window for dirt or fogging.

Operating One Dimensional (1D) Internal Laser Scanners

- Turn the hand-held on. Wait until the unit has booted up completely.

IMPORTANT If an aiming dot is available on the installed scanner, the dot will be enabled for a configurable time period (including off), after which normal scanning begins. Refer to “Dot Time (msec)” on page C-5 for details.

Double-clicking the trigger will override the aiming delay and initiate an immediate scan. Note that the aiming dot is standard on long-range and high visibility internal scanners.

- Aim at the barcode and press the scan key or the trigger. A scan beam and a warning indicator appear until a successful decode is achieved or six seconds have elapsed.

Operating Internal Two Dimensional (2D) Imagers

An imager scanner takes a snap shot of a single barcode or multiple barcodes (at one time). It can find a barcode regardless of its orientation — that is, even a barcode printed at a 45 degree angle to the hand-held will be decoded successfully.

NOTE When scanning **multiple** barcodes, ensure that all of the desired barcodes are within the field of view of the scanner. It is possible that even when all barcodes are within the field of view, not all of them will be decoded. Only successfully decoded barcodes are passed to the application program. The application program then issues a warning, asking that you scan the missing barcodes.

When scanning a **single** barcode, ensure that only the desired barcode is within the field of view of the scanner.

Because imager scanners generally have a shorter depth of field than laser scanners, some practise may be required to find the optimal distance from the types of barcodes being scanned. Although the imager includes illumination LEDs, ambient light will help the imager decode the barcodes, especially if the barcode is far from the hand-held.

IMPORTANT Keep in mind that the imager scanner is a camera, and the LED illumination is a flash. Glare can be an issue on reflective media such as plastic coated barcodes, just as glare is an issue for photographers. When pointing at a shiny surface, either shift the barcode to the side or top, or angle the barcode so that the glare reflects away from the imager scanner.

Most imagers take several snap shots of the barcode in order to decode it. It is normal for the LEDs to flash two or three times. Hold the unit steady between flashes to improve decode performance.

- Turn the hand-held computer on. Wait until the unit has booted up completely.
- Aim at the barcode and press the scan key or the trigger. Hold the trigger until a successful or failed scan result is obtained.
- When the scan button or trigger is pressed, a red, oval shaped light (the framing marker) is displayed. Centre the framing marker in the field — either in the centre of the barcode you want to scan or in the centre of the area in which multiple barcodes are to be scanned.

The illumination LEDs will flash (typically several times) and a picture of the barcode is taken.

Windows Embedded CE 6.0

Navigating in Windows Embedded CE and Applications

Graphic user interfaces such as Windows Embedded CE for portable devices and desktop Windows (Windows Vista™, Windows 7, Windows 8, etc.) utilize point and click navigation. An equivalent keyboard shortcut is also available for every point and click action.

Windows Embedded CE supports the same point and click user interface and keyboard shortcuts as desktop Windows with one difference — the point and click action is accomplished using a touchscreen rather than a mouse. Actions can be performed using any combination of keyboard shortcuts or touchscreen tapping. In those applications that support it, you can also flick and pan your finger to scroll through screens.

Navigating Using a Touchscreen

NOTE If the touchscreen is not registering your screen taps accurately, the touch-screen may need recalibration. Refer to "Calibrating the Touchscreen" on page 2-10.

The Omnii comes equipped with a stylus — a pointing tool that looks like a pen. The stylus is used to select objects on the touchscreen. You can also use gestures with your fingers. You can use two gestures: pan and flick. Use left or right flicks to quickly move between tabs of a multi-tab control panel, or to scroll long lists of options. Use panning by touching and dragging a page that has scrollbars.

NOTE To prevent damage to the touchscreen, use only a finger touch or the stylus (pen) supplied with your Omnii.

To choose an icon, open a file, launch an applet or open a folder:

- Double-tap on the appropriate icon.

Navigating Using the Keyboard

If you would like to use keyboard input to choose icons and navigate dialog boxes, refer to the table following.

Operation	Key or Key Combination
Switch between active applications	[ALT] [TAB]
Open task manager	[ALT] [ESC]
Move the cursor	Arrow keys
Open file, folder or icon	[Enter]
Exit & Save	[Enter]
Close/Exit & Do Not Save	[ESC]
Navigate Dialog Boxes	[TAB] To move cursor up [SHIFT] [TAB] To display the contents of the next tab in a dialog box [CTRL] [TAB]

Operation	Key or Key Combination
Select Radio Button/Press Button	[SPACE]
Go to Start Menu	[Windows]

Keep in mind that unlike a desktop computer, the Omnii does not support key chording (pressing two keys at the same time). You must press one key followed by the next in sequence.

The Windows Classic Shell Startup Desktop

When the Omnii boots up, the default startup desktop (Windows Classic Shell) is displayed. Any applications stored in the Startup folder start up immediately.

NOTE The startup folder is located in \Windows\StartUp and \Flash Disk\StartUp.

Figure 2-5 *Omnii Windows Classic Shell Startup Desktop*

To access desktop icons:

- Double-tap on the icon to open a window or, in the case of an application icon, launch an application.

On the keyboard:

- Use the arrow keys to highlight the icon, and press **[Enter]** to launch the highlighted icon.

NOTE If the arrow keys do not highlight the desktop icons, the desktop may not be selected. Press [Windows] to display the Start Menu, and select Desktop. Now the desktop will be “in focus” and the arrow keys will highlight the icons.

The Taskbar

The Omnii is equipped with a taskbar at the bottom of the screen. It displays icons through which you can view the battery capacity and radio signal quality of your unit. If the hand-held is attached to a charger, cradle, docking station, or Snap Module, an associated icon is displayed. In addition, the taskbar displays the application(s) currently running on your unit.

The taskbar also displays active modifier keys: [SHIFT], [ALT], [CTRL], [FN] and [SYM]. Keys that have been locked “on” are displayed with underlined letters. For example, if you have set the [CTRL] key lock to “on” in the Keyboard menu and you press the key, it is displayed as an underlined Ctrl in the taskbar. (For detailed information on modifier keys and keyboard options, see “The Keyboard” on page 2-4).

Using the Taskbar

A tooltip is displayed as each taskbar icon is highlighted. The tooltip provides the status of each icon.

If you’re using the touchscreen:

- Tap and hold on an icon to display the icon's tooltip. Double-tap the icon to open the Control Panel dialog box associated with the icon. For example, double-tap the battery icon to display a dialog box listing the current battery capacity information.

On the keyboard:

- Press **[Windows]** to display the *Start Menu*.
- Choose **Shortcuts** from the *Start Menu*, and then press the **[RIGHT]** arrow key to display the sub-menu.
- Choose **System Tray** in the sub-menu.
- Use the arrow keys to highlight the icon in the taskbar about which you’d like more information.
- Press **[Enter]** to display the appropriate dialog box.

Customizing the Taskbar

To customize the taskbar so that it displays only those icons you require:

- In the *Start Menu*, choose **Settings**, and then **Taskbar**.

If you’re using the keyboard:

- Press **[Windows]** to display the *Start Menu*.

- Highlight the **Settings** option, highlight **Taskbar** in the sub-menu, and press **[Enter]**.

The *Taskbar and Start Menu* dialog box is displayed.

- Tap on the items you want to activate or deactivate. The check mark indicates active items.

If you're using the keyboard:

- Highlight the options you want to activate, and press the **[SPACE]** key to select them. A check mark indicates active items.

The Start Menu

The *Start Menu* lists the operations you can access and work with. It is available from the startup desktop or from within any application.

- To display the menu, tap on the **Start Menu**.

NOTE Tap on the item in the menu with which you want to work.

If you're using the keyboard:

- Use the arrow keys to highlight a menu item, and press **[Enter]**, or

If the menu item has an underlined character:

- Type the underlined alpha character. For example, to display the *Run* dialog box, type the letter **r**.

Programs

- Choose **Programs** to display a sub-menu of options. The programs displayed will be those resident in the *Windows\Programs* folder of the computer.

Figure 2-6 *Program Sub-Menu*

This sub-menu allows you to choose *Command Prompt*, *Internet Explorer*, installed applications (e.g., Microsoft WordPad), *Kiosk Access, Remote Desktop Connection*, *Wi-Fi Config*, or *Windows Explorer*.

Demo

This folder contains the *Scanner Demo*, *Demo Signature* and *Demo Sound* applications. *Scanner Demo* can be used to test how the hand-held reads barcodes. *Demo Signature* allows you to capture a signature written on the screen with your stylus and save it to a file. *Demo Sound* allows you to record and playback sound files. The Sample Rate and the Bits Per Sample are the rates at which the sound will be recorded. Sounds recorded at the higher sample rate or bits per sample will be higher quality sound but will require more file storage space. Lower sample rates and/or bits per sample produces a smaller file, but the sound quality suffers. The record and play buttons operate the same as any recording device. The *X* icon deletes the sound and the *diskette* icon allows you to save your sound.

Command Prompt

Command Prompt is used to access the DOS command prompt. At the prompt, you can type DOS commands such as *dir* to display all the directories in the drive.

Internet Explorer

The Omnii is equipped with Microsoft Internet Explorer for Windows Embedded CE. You can access the *Internet Options* icon through the *Start Menu* under *Settings>Control Panel* or by double-tapping on the desktop icon **My Device** and then, double-tapping on the **Control Panel** icon.

Microsoft WordPad

WordPad is a basic word processor used to create, edit, and print *.rtf*, *.doc*, and *.txt* files.

Kiosk Access

Kiosk Access allows you to change the appearance and actions of the desktop from the default Windows Classic Shell to the Kiosk shell.

Remote Desktop Connection

Remote Desktop Connection is an Omnii application used to connect to a Windows Terminal Server so that you can run a “session” on the Server machine using the hand-held (Windows Embedded CE device). “Remote Desktop Connection” on page 3-54 provides a website with details about this option.

Wi-Fi Config

The *Wi-Fi Config* application is used to configure the Omnii 802.11a/b/g/n radio for one or more wireless network profiles.

Windows Explorer

The Windows Explorer installed on your Omnii is consistent with all Windows Embedded CE devices.

Shortcuts

Figure 2-7 *Shortcuts Sub-Menu*

System Tray

If your touchscreen is not enabled, you can use the *System Tray* option to access the icons in the taskbar at the bottom of the screen. The taskbar displays indicators such as a radio signal icon. These indicators are attached to dialog boxes that provide additional information.

- Choose **Shortcuts>System Tray**.

When *System Tray* is chosen, the taskbar icons become accessible. To display the dialog box attached to an icon:

- Use the arrow keys to highlight an icon, for example, the *Bluetooth* icon.
- Press **[Enter]** to display the *Bluetooth* menus.

Cycle Tasks

When *Cycle Tasks* is selected (and the Task Manager is not open), you can cycle through active applications.

To cycle through your active applications:

- Choose **Shortcuts>Cycle Tasks**, or
- Press [**ALT] [TAB]**.

Task Manager

The *Task Manager* allows you to switch to another task or to end an active task. To display the task manager window:

- Tap on **Shortcuts>Task Manager**, or
- Press **[ALT] [ESC]**.

Settings

The **Settings** sub-menu includes the following settings: *Control Panel*, *Network and Dial-up Connections* and *Taskbar and Start Menu*.

Figure 2-8 *Settings Sub-Menu*

Control Panel

The *Control Panel* contains applets used to configure hardware, the operating system and the shell. If your Omnii is running with the Motorola TekTerm application or another application, additional configuration applets may appear in the *Control Panel*.

Network and Dial-Up Connections

The *Network and Dial-up Connections* window allows you to configure the Omnii network interfaces or execute an existing configuration. Refer to “Connectivity” on page 1-10 for radio setup details.

Taskbar and Start Menu

The *Taskbar and Start Menu* option displays a dialog box in which you can customize the taskbar, choosing which options will be displayed. Refer to “Customizing the Taskbar” on page 2-21 for additional details about this option.

Run

Choosing the *Run* option from the *Start Menu* displays a dialog box in which you can enter the name of the program, folder or document you want to open or launch.

Shutdown

The *Shutdown* menu includes these options: *Suspend, Warm Reset* and *Cold Reset*.

Suspend

The *Suspend* option suspends the Omnii immediately. This is equivalent to turning the hand-held off.

Warm Reset

The *Warm Reset* option resets the hand-held, leaving all saved files and registry settings intact. Any unsaved data is lost.

Cold Reset

The *Cold Reset* option resets the hand-held. Any files not stored in permanent memory are lost; however, the registry settings are saved.

The Kiosk Desktop Shell

The appearance and actions of the desktop can be changed by tapping on the **Kiosk Shell** icon on your desktop, which activates the Kiosk shell.

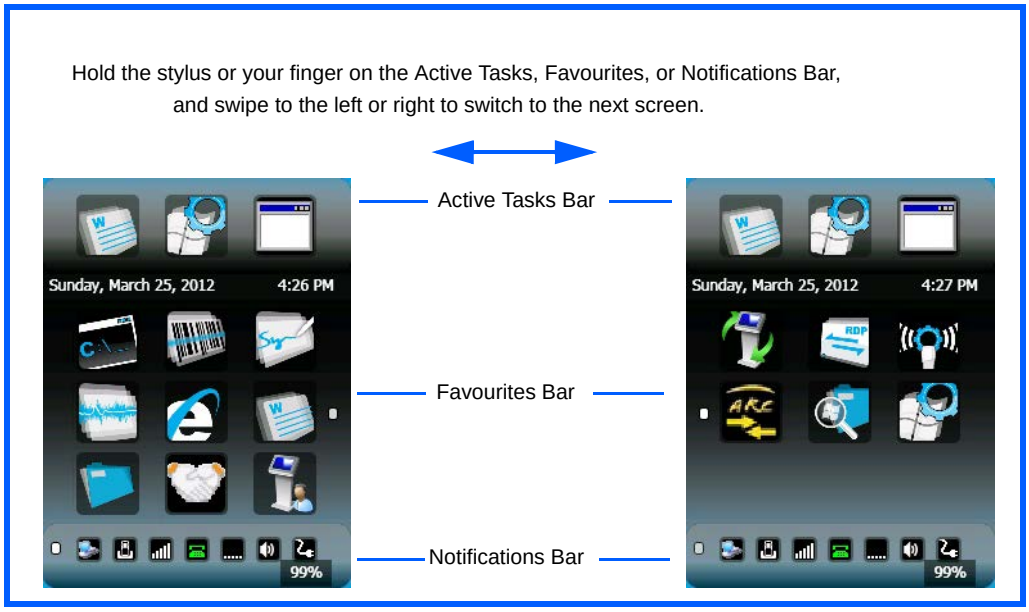
NOTE The Omnii will be reset if you choose to switch shells.

Figure 2-9 *Switch to Kiosk Shell*

Kiosk Shell
100%
Switching the Kiosk Shell requires a device-reset. All unsaved data will be lost. Switch the Shell and reset now?
Reset Now
Cancel

After resetting the Omnii, the desktop appearance will be very different. The programs are accessed with finger (or stylus) taps and swipes. If there are more applications than shown on one screen, a white animated dot will be present on the side of the screen in the direction of the next set of icons. Swiping the screen to that direction will move the display to the next screen.

NOTE Although the Desktop appearance defaults to the “Ingenuity” theme, the theme is not changed using the ***Kiosk Shell*** icon. To change themes, open the Shell Settings>Advanced menu in ***Kiosk Access*** (see “Shell Settings” on page 3-51).


Hold the stylus or your finger on the Active Tasks, Favourites, or Notifications Bar, and swipe to the left or right to switch to the next screen.
Active Tasks Bar
Favourites Bar
Notifications Bar
Sunday, March 25, 2012
4:26 PM
Sunday, March 25, 2012
4:27 PM
99%
99%

A different program, *Kiosk Access*, enables you to customize your computer settings, remove or add shortcuts to the Favourites Bar and Control Panel, and limit access to various different components on the computer and the system tray icons for security. For details see “Kiosk Access” on page 3-49. To change your Desktop background, refer to “Shell Settings” on page 3-51.

Active Tasks Bar

Open applications are shown in the top bar — the most recently opened is the first icon on the left. Tapping once on a program icon will maximize the application. This feature replaces the Task Manager of the Windows Classic Shell.

Date/Time Bar

Tapping once on the date or time will open the *Date/Time Properties* settings to enable you to change your settings and time zone.

Favourites Bar

The *Favourites Bar* replaces the Windows Classic Shell Desktop and Start Menu. These icons are the program shortcuts from your *Windows>Start Menu*. Tapping once will open the program. If you tap and hold on an icon, the application name is displayed.

Notifications Bar

This bar shows the run-time program notifications for *Battery*, *Volume*, *Wi-Fi*, *Phone* or *GPRS*, and other notifications for the programs you are running. This feature replaces the Taskbar of the Windows Classic Shell.

Desktop Minimized View

When an application is opened and maximized, the desktop view is minimized and the *Notifications Bar* is shown at the bottom of the screen. Tapping anywhere on the **Notifications Bar** (except on the SIP) will restore the Kiosk desktop.

In order to use the SIP, turn on the automatic settings in ***Control Panel>Input Panel***.

Kiosk Access

The *Kiosk Access program* allows you to open a different program, *Kiosk*, which enables you to customize your computer settings, remove or add shortcuts to the Favourites Bar and Control Panel, and limit access to various different components on the computer and the system tray icons for security. For details see “Kiosk Access” on page 3-49. To change your Desktop background, refer to “Shell Settings” on page 3-51.

To open Kiosk:

- Tap on the **Kiosk Access** icon in the *Favourites Bar*.

Restoring the Windows Classic Shell

The default Desktop appearance and actions can be restored by tapping on the **Kiosk Shell** icon in the *Favourites Bar*.

Figure 2-10 *Shell Switch to Windows Classic Shell Desktop*

NOTE The Omnii will be reset if you choose to switch shells.

General Maintenance

Caring for the Touchscreen

The touchscreen is covered with a thin, flexible polyester plastic sheet with a conductive coating on the inside. The polyester can be permanently damaged by harsh chemicals and is susceptible to abrasions and scratches. Using sharp objects on the touchscreen can scratch or cut the plastic, or crack the internal conductive coating. The chemicals listed below must not come into contact with the touchscreen:

- mustard
- ketchup
- sodium hydroxide
- concentrated caustic solutions
- benzyl alcohol
- concentrated acids

If the touchscreen is used in harsh environments, consider applying a disposable screen protector (RV6105). These covers reduce the clarity of the display slightly but will dramatically extend the useful life of the touchscreen. When they become scratched and abraded, they are easily removed and replaced.

Do not to expose the touchscreen to direct sunlight for prolonged periods of time. If this is unavoidable, use a UV screen protector to extend the life of the screen.

Cleaning the Omnii

IMPORTANT Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.

To prevent damage to the touchscreen, use only your finger or the stylus (pen) supplied with your Omnii.

- Use only mild detergent or soapy water to clean the hand-held unit.
- Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The Omnii has a plastic case that is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
- Exposure to aircraft de-icing fluids can degrade the plastics on Omnii. If the Omnii is used near aircraft de-icing environments, regular rinsing with water is recommended.
- To clean ink marks from the keypad and touchscreen, use isopropyl alcohol.

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Overview of Software

The Omnii programs and applications are accessed through two main areas from the Desktop Start Menu: *Programs and Settings>Control Panel*. This chapter details the configuration for the major software from both areas, listed alphabetically.

Motorola Software Advantage

Motorola Software Advantage is a collection of applications and features designed to support system administrators and end users. These tools enable enterprises to customize the product to meet their needs and to maximize productivity.

- AGPS
- App Launch Keys
- Battery Health
- Bluetooth Manager
- Compass
- Dr. Debug
- Manage Triggers
- PartnerUp
- Kiosk
- Scanner
- Total Recall
- TweakIt
- WiFi Config
- WiFiConnect A.R.C.

Microsoft Software

Windows CE 6.0 R3 is a 32-bit, real-time, multitasking Operating System. The OS features a small footprint, with compatibility to port existing Win32 applications and Touch & Gesture support.

Some of the major Windows CE 6.0 R3 components are:

- Control Panel, where both Motorola Advantage and Microsoft applications are listed
- Flash Lite
- Internet Explorer Embedded
- Microsoft WordPad
- Remote Desktop Connection
- Windows Explorer

The Control Panel

The Windows Embedded CE *Control Panel* provides a group of applications through which you can set a variety of system-wide properties, such as power, keyboard sensitivity, network configuration, system backup, desktop appearance, and so on.

When the Omnii boots up, the startup desktop (Windows Classic Shell) is displayed, and any applications stored in the Startup folder start up immediately.

To access the *Control Panel*:

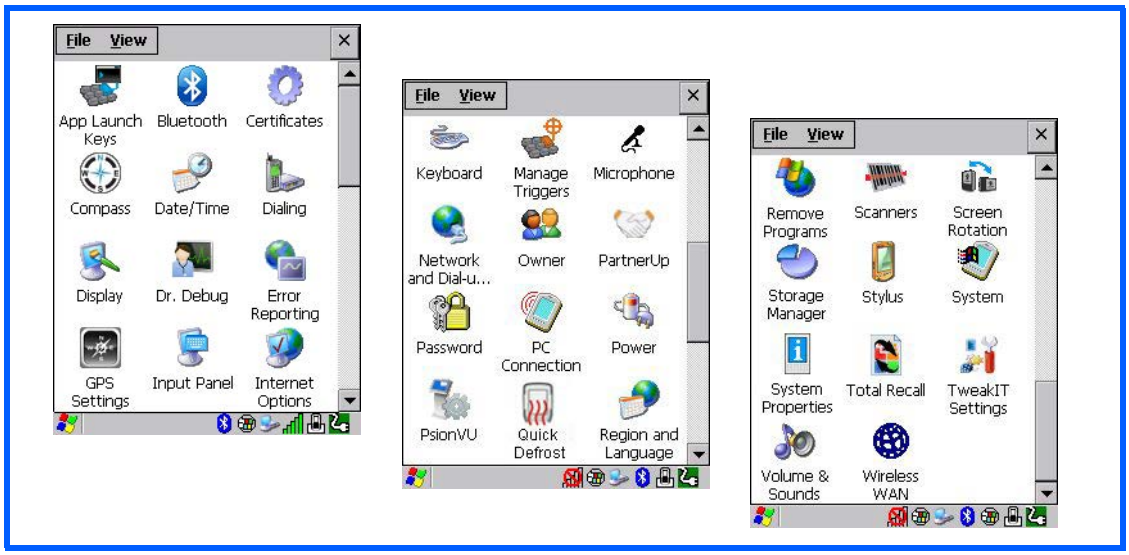
- Press the **[Windows icon]** to display the *Start Menu*.
- Tap on **Settings**>**Control Panel**.

If you're using the keyboard:

- Press the **[Windows icon]** to display the *Start Menu*.
- Highlight **Settings** in *Start Menu*, and press the [RIGHT] arrow key to highlight the *Control Panel*.
- Press the **[Enter]** key.

The *Control Panel* folder contains icons used in the setup of your Omnii.

Figure 3-1 *Control Panel Icons*



Control Panel Applications

The *Control Panel* provides a group of applications that allow you to customize and adjust settings on your Omnii. This section shows the related icons in the Control Panel and gives a brief description of each.

App Launch Keys

By mapping keys to applications using this program, you can then launch those applications from a single key-press.

Bluetooth

Opens the *Bluetooth* Manager which provides options for configuring various Bluetooth peripherals. It also provides the capability to use a *Bluetooth*-enabled cellular phone as a data modem to exchange information with other *Bluetooth* devices and provide network access.

Certificates

This program provides access to the Certificates Manager and Stores. The Certificates Manager displays the certificates in the Windows Certificates Store, and allows you to import, delete, and view these certificates. “Compass” on page 3-7 directs you to the appropriate setup information.

Compass

The internal compass can be calibrated to indicate in which direction the unit is pointed.

Date/Time

Allows you to set the current Month, Date, Time, and Time Zone on your unit.

Dialing

Specifies dialing settings, including area code, country code, dial type and the code to disable call waiting. You can store multiple patterns — for example, Work, Home, and so on using this dialog box.

Display

Changes the display backlight and the appearance (colour scheme) on the unit desktop.

Dr. Debug

Provides both error diagnostic and troubleshooting tools.

Error Reporting

Allows you to enable or disable Microsoft error reporting prompts.

GPS Settings

Allows you to enable and configure GPS operation.

Imagers

The Imagers applet is used to create, modify, delete, and activate imager settings. This icon is only present when the appropriate imager is installed. For detailed information, see Appendix B: “Imager & Camera Settings”.

Input Panel

Provides the framework for a Microsoft Soft Input Panel (SIP) should you need to design your own SIP, or change some soft keyboard options.

Internet Options

Provides options to configure your Internet browser. You can determine items such as the default and search page that the browser applies when connecting to the Internet, the cache size, the Internet connection options, and the security level that is applied when browsing.

Keyboard

Toggles character repeat on and off and specifies delay and rate for repeated characters. It also allows you to adjust the keyboard backlight threshold and intensity, and many other functions.

Manage Triggers

This utility allows you to define buttons as triggers for different devices. For example you would use this utility to configure a button for the scanner, RFID reader, and camera.

Microphone

Enables you to adjust the gain for the specific microphones associated with your hand-held.

Network and Dial-up Connections

Displays network interfaces and allows new dial-up and VPN interfaces to be created. It also allows Windows configuration of the interface. Refer to “Connectivity” on page 1-10 for details.

Owner

Provides fields in which you can specify owner information. A *Notes* tab allows additional information to be entered and displayed when the unit is powered up. *Network ID* tab information is used to access network resources. (This information should be provided by your System Administrator.)

PartnerUp

This app displays a number of pre-loaded applications. By tapping on an application in the list, you are taken to the associated web site and allowed to install the application.

Password

Allows you to assign a password to restrict access to elements of the unit. Once assigned, password access cannot be circumvented so it is important that you write down your password and keep it in a safe place.

PC Connection

Enables direct connection to a desktop computer (or through ActiveSync — see “Data Transfer” on page 1-10). Selecting the *Change Connection* button allows you to change the type of direct connection to your PC.

Power

Displays battery pack power status. (Alternately, battery status can be accessed through the taskbar.) Additional tabs allow you to determine suspend states and specify a suspend threshold.

Kiosk

Kiosk enables you to customize your computer settings, remove or add shortcuts to the desktop and Control Panel, and lock down access to various different components on the computer and the system tray icons for security. With *Kiosk* and *Kiosk Shell* (see “The Kiosk Desktop Shell” on page 2-27) you can customize the entire look and feel of your User Experience.

Quick Defrost

The optional Heater Control feature for the OmniiXT15f freezer models is used in cold environments to prevent condensation from developing on or inside the Omnii. Refer to Appendix F: “Omnii XT15f Freezer Variants” for detailed information.

Region and Language

Allows you to specify the local language that is to be displayed on the hand-held screen along with the format of numbers, currency, time and date for your region.

Remove Programs

Lists the programs that can be removed from your unit. To remove a program, select it and then click on the **Remove** button.

Scanners

Provides scanner parameters and the barcode symbologies that the Omnii barcode scanner will successfully read.

Screen Rotation

This feature enables you to change screen orientation into either landscape, portrait, or both modes.

Storage Manager

Allows you to view information about the storage devices that are present, such as SD-MMC flash cards. For details, see “Storage Manager” on page 3-63.

Stylus

Adjusts how Windows Embedded CE recognizes your double-tap (as slow or rapid successive taps). In the *Calibration* tab, you can recalibrate your touchscreen by tapping on the **Recalibrate** button and following the directions on the screen.

System

You can display the system and memory properties, as well as create your device name. In the *Memory* tab, you can allocate memory between storage memory and program memory.

System Properties

Identifies the computer’s software and hardware components, indicating which components are installed, their version or part numbers, and whether they are enabled or disabled.

Total Recall

Provides access to a backup/restore and deployment utility to maintain applications and settings over cold reboots and for multiple devices.

TweakIt

Allows you to change Advanced System Settings (interface, network, and servers), User System Settings (display font size), and provides the Registry Editor.

Volume & Sounds

Allows you to adjust the volume of the sound emitted to indicate events like warnings, key clicks, and screen taps. You can also configure system (Windows) sounds and *.wav* files.

Wireless WAN

Provides access to technology like GSM/GPRS, which allows wide area networking capability such as internet browsing via GSM/GPRS. It also provides access to the Phone API. For detailed information, see Appendix G: “Wireless Wide Area Network (WWAN) Settings”.

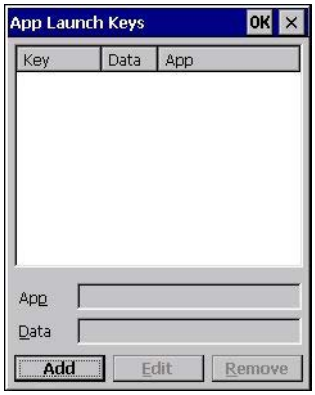
App Launch Keys

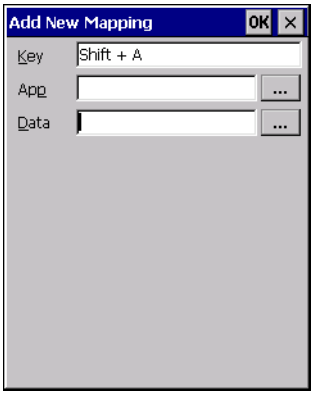
The *App Launch Keys* icon allows you to map a key to an application so that you can then launch the application from a single key-press.

- In the *Control Panel*, choose the **App Launch Keys** icon.

To assign an application key:

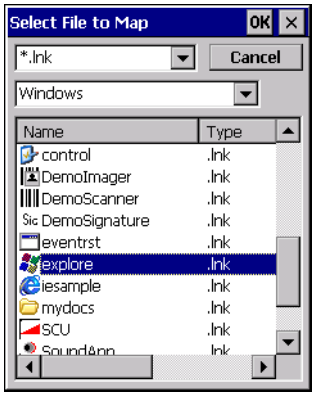
- Tap the **Add** button.





- Press the key you want to use to launch an application. (If an unsupported key is pressed, a message appears on this screen letting you know.)

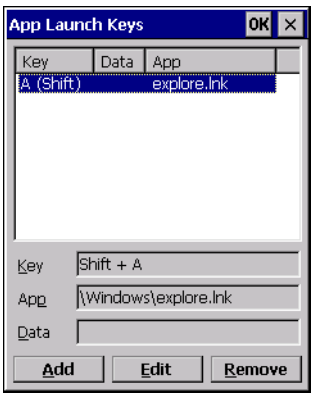
The cursor moves to the *App* field and a new screen is displayed where you can choose the application to which you want to assign the application key. If you need to, you can *Browse* through the information in your Omnii until you locate the application you want to launch.



- Once you've selected the file you want to map, tap on **OK**.

The cursor moves to the *Data* field. You can use this field if you need to need to define command line parameters for your application. If you don't want to assign any parameters, you can leave the *Data* field blank. If, for example, you want to assign an application launch key to launch the *WordPad* application, you can leave this field blank. If you want to assign an application launch key that will open a specific document in the *WordPad* application, you need to browse to and choose that document while the cursor is in the *Data* field.

- Tap on **OK**.



- If you need to Edit, Remove or Add another *App Launch Key*, you can do it from this final screen. Otherwise, tap on **OK** to save your *Application Launch Key*.
- To launch the application you chose, press the application key you assigned.

Bluetooth® Setup

Bluetooth is a global standard for wireless connectivity for digital devices and is intended for Personal Area Networks (PAN). The technology is based on a short-range radio link that operates in the ISM band at 2.4 GHz. When two *Bluetooth*-equipped devices come within a 10 metre (32 ft.) range of each other, they can establish a connection. Because *Bluetooth* utilizes a radio-based link, it does not require a line-of-sight connection in order to communicate.

It is possible to communicate with a variety of *Bluetooth* peripherals, including GSM/GPRS handsets, scanners, printers, and so on.

Motorola provides built-in support for:

- GSM/GPRS universal handset
- *Bluetooth* printer
- *Bluetooth* headset

Keep in mind that *Bluetooth* and IEEE 802.11g radios both operate in the 2.4GHz band. Although the Omnii includes features to minimize interference, performance of the system will not be optimal if you use both radios simultaneously. Typically, when both radios operate in the hand-held at the same time, they cannot transmit simultaneously — this has a negative impact on overall system throughput. To minimize the impact on the backbone 802.11 network, Motorola recommends using *Bluetooth* peripherals that have low transaction rates (such as printers and scanners).

Bluetooth peripherals are configured by choosing the **Bluetooth** icon in the *Control Panel*. In addition, review the manual shipped with your *Bluetooth* device to determine the method used to associate with the Omnii host.

NOTE The **Bluetooth** radio uses an internal antenna.

- In the *Control Panel*, choose the ***Bluetooth*** icon to display the ***Bluetooth*** *Manager* screen.

The ***Bluetooth*** *Manager* allows users to search, pair and connect to other *Bluetooth* devices within their personal area network.

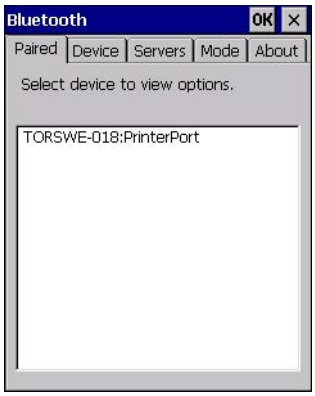
The *Bluetooth* radio is disabled by default. Before you begin the setup process:

- Tap on the **Mode** tab, and tap in the check box next to *Turn on* ***Bluetooth***. Tap on **OK**.

When the radio is enabled, a *Bluetooth* icon appears on the taskbar at the bottom of the screen. It is ready for setup.

Paired

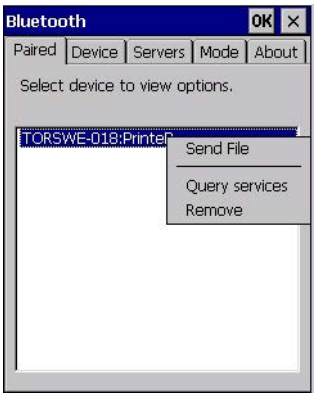
This tab lists all paired devices and their corresponding services. The format of the name is <Device Name>:<Service Name>. Additional information may appear in this screen such as the Port Numbers for Serial Profiles service.



To learn how to scan for devices to pair, review “Device” on page 3-13.

NOTE If a service is actively paired and connected, the device and its services are displayed in bold typeface in this list.

- Tap on an item in the *Paired* tab to display an associated pop-up menu.



The displayed menu depends on the type of the service chosen.

Query Services and Remove Commands

- *Query Services* displays a *Services* dialog box where a pairing service is chosen.
- *Remove* unpairs the highlighted service and deletes the entry from the tab.

OBEX OPP (Object Exchange-Object Push Profile) Commands

The *OPP* defines two roles — a *Push Server* and a *Push Client*. *Push Server* is the device that provides an object exchange server. *Push Client* is the device that pushes and pulls objects to and from the *Push Server*.

OBEX OPP contains the following unique menu option:

- *Send File* displays an *Open File* dialog box where the file to be sent can be selected. When the transmission begins, another dialog box tracks the progress of the file transmission.

HSP/HFP (Headset Profile/Hands-Free Profile) Service Commands

The *HSP (Headset Profile)* allows users to connect their device to *Bluetooth* enabled headsets and other audio devices.

HSP/HFP services provide the following unique menu options:

- *Connect Audio* establishes an audio connection to the *Bluetooth* headset.
- *Disconnect Audio* disconnects the audio connection from the *Bluetooth* headset.
- *Volume Control* displays a dialog box where the headset and microphone volume can be adjusted.

Device

In this tab, users can discover and display *Bluetooth* devices.

Discovering and Removing Devices

Scan discovers *Bluetooth* devices in range of the Omnii and lists them in this tab. Any existing devices previously discovered and listed will also be displayed.

Clear removes all *Bluetooth* devices listed except those with currently paired and connected services.

NOTE To limit the number of devices listed to a particular type of device, refer to "Filtering By Class of Device (COD)" on page 3-14, next section.

Filtering By Class of Device (COD)

This menu allows you to filter the displayed devices by their COD. If, for example, you choose **Computer** from this menu, only the devices that have the matching *Computer* COD value will be displayed. Choosing *All* lists all detected devices.

Device Pop-up Menu

The *Device* pop-up menu allows you to pair a device, update a device name or delete a device from the list.

Pair begins the pairing process by querying the services and profiles of the discovered device. An *authentication* dialog box is displayed the first time a *Bluetooth* device is paired.

Refresh Name repeats the device name inquiry, updating the name. This command is useful if a device is listed without a name (unknown), or if a device name has been changed remotely.

Delete removes this device from the list.

Pairing a Device

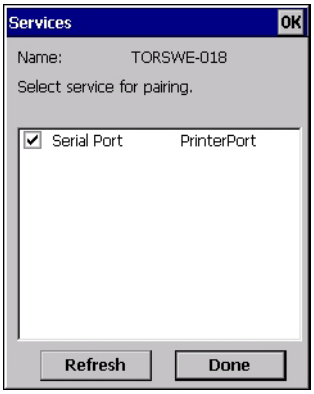
To pair devices:

- Follow the manufacturer's instructions to place the remote device in pairing mode.
- Choose the **Devices** tab and **Scan** for devices in your area.
- When the scan is complete, tap on the **device** to which you want to pair.
- In the pop-up *Device* menu, tap on **Pair**.

An *Authentication* dialog box is displayed.

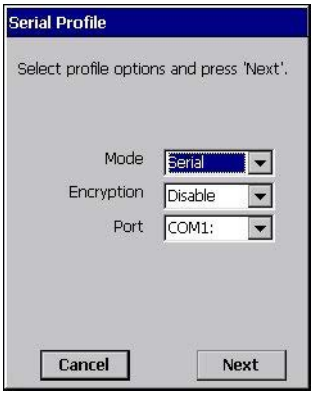
- If the remote device has authentication enabled, type the PIN in this dialog box.
- To proceed *without* authentication, tap on **Next**.

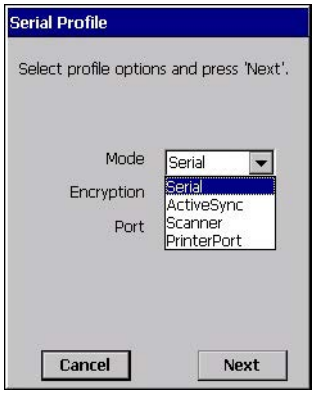
After entering the device *PIN*, the *Services* dialog appears with a list of services available for that device.



- Click in the check box to the left of the service to activate it.
- Click on **Done**.

Services that require more information present a configuration dialog box. *Serial Profile* is an example.





This dialog box offers a number of additional options such as enabling *Encryption* and selecting four different *Modes*: *Serial*, *ActiveSync, Scanner*, and *Printer Port*.

Serial is used for simple serial port communication.

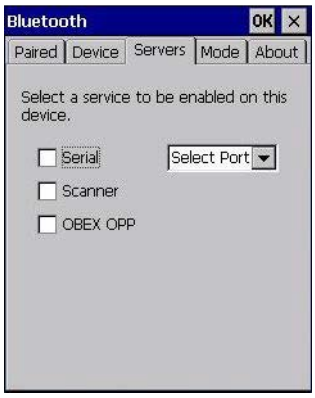
ActiveSync is for ActiveSync-over-*Bluetooth*.

Scanner is used to create a connection to a barcode scanner. A serial connection is created, then the *Scanner Services* is notified of the connection so that the incoming barcode scan will be forwarded directly to *Scanner Services*.

Printer Port must be chosen here if you want to communicate with a paired *Bluetooth* printer. For further details, see “Mode” on page 3-17.

- Once you’ve completed the information, tap on **Next** and then in the *Services* screen, click on **Done**.

Servers



When a remote *Bluetooth* device initiates a *Bluetooth* connection to the Omnii, the remote device is considered the *Bluetooth* master and the hand-held, the *Bluetooth* slave. In order for the remote device to connect to the hand-held, the Omnii must offer a service in the form of a server. The *Servers* tab allows these services to be enabled and configured. There are three server services available: *Serial*, *Scanner* and *OBEX OPP*.

Serial server enables the Serial Port Profile server; a Serial Port can be selected from the drop-down menu.

You can assign either a BSP or a COM prefix from the drop-down menu. BSP (*Bluetooth* Serial Port) was created by Microsoft to allow *Bluetooth* to have its own serial prefix in order to free up virtual COM prefixes as these are limited and are widely used.

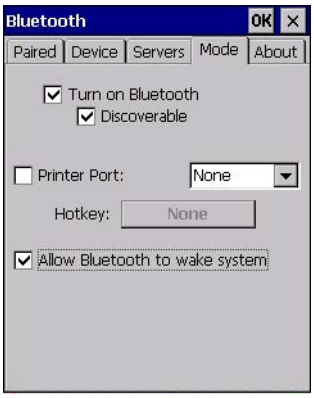
NOTE Even after a Serial Port Profile server is created, an application must open the created port before a remote device can connect.

Scanner server enables a Serial Port Profile server and then relays it to the Scanner Service (SCS). This is used for *Bluetooth* barcode scanners that operate in client mode. SCS opens the server port and handles the scanner input.

OBEX OPP server enables the Object Push Profile server. A warm reset must be performed on the Omnii after a change is made to this option. The OPP Server allows other *Bluetooth* devices to send files to this device.

- Tap on the check box to activate the server.

Mode



Turn on *Bluetooth* activates the *Bluetooth* radio.

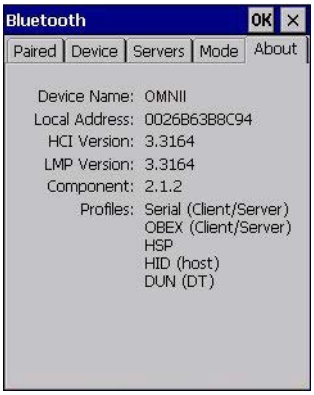
Discoverable determines whether the Omnii is visible or invisible to other devices.

Printer Port allows you to assign and enable a virtual outgoing COM port selected from the drop-down menu to communicate with a paired *Bluetooth* printer. Keep in mind that when a port is chosen, the printer must be on and connected to the chosen port for a remote device to be able to connect.

- Select a port within the *Printer Port* drop-down list, e.g. **BSP1:**
- Check the *Printer Port* check box.
- Open the *Device* tab and tap on **Scan**.
- Tap-and-hold each *Bluetooth* Printer device entry and then select **Pair**, key-in the Passcode (if needed) and then tap **Done**. DO NOT select any services!
- Close the *Bluetooth* Manager.
- Select the *Bluetooth* device to print to — you will need to key-in (or programmatically raise) the following key sequence [CTRL] [ALT] [F1].
- You can now select the *Bluetooth* device to which you wish to print.

Allow Bluetooth to wake system allows remote *Bluetooth* devices to wake the Omnii by requesting a *Bluetooth* service that requires host intervention. This feature can also be used when the Omnii is waking from suspend to significantly to reduce the initialization time of the *Bluetooth* system.

About



Device Name displays the broadcasted name of the hand-held. The name can be changed in the *System Properties* applet: *Start>Settings>Control Panel>System icon>Device Name tab*.

Local Address displays the MAC address (BD_Addr) of the *Bluetooth* chip.

HCI Version & LMP Version display the version of the chip firmware.

Component indicates the version of the Motorola *Bluetooth* Subsystem (the manager, drivers, etc).

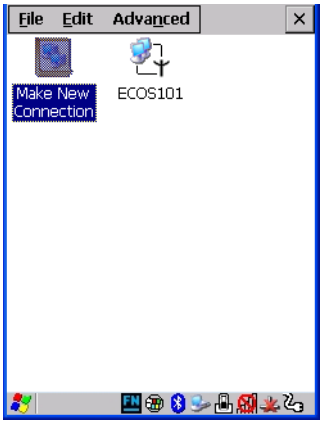
Profiles lists the supported profiles on this specific Omnii.

The *Bluetooth* GPRS WAN Connection

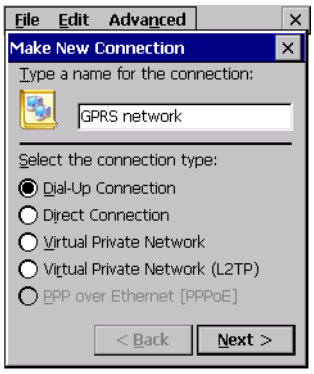
The following steps describe how to set up an Internet data connection using a GSM cellular telephone with *Bluetooth*. The Omnii communicates via *Bluetooth* to the cell phone, which then accesses a WAN (Wide Area Network) and transfers data using GPRS.

1. Enable the *Dial-Up Networking service* in the cell phone.
2. Make the phone *discoverable*.
3. Pair the phone service with the Omnii Dial-Up Networking service using the *Bluetooth Manager*. (For instructions on pairing devices, refer to "Pairing a Device" on page 3-14.)
4. To set up the Internet parameters, choose the **Network And Dial-up Connections** icon from the *Control Panel*.

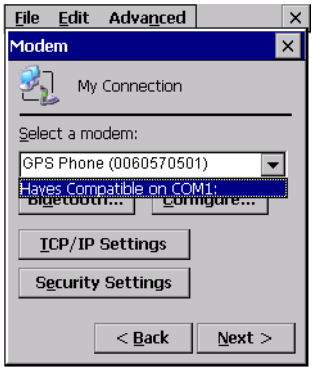
5. Tap on **Make New Connection**.



6. In the *Make New Connection* dialog box, choose **Dial-Up Connection**. Enter a name for your GPRS network connection.

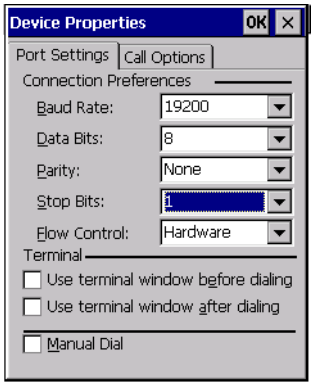


7. Choose the **Next** button to display the *Modem* dialog box.

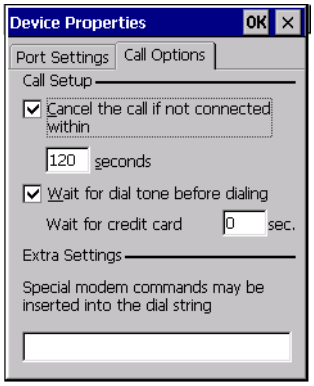


8. In the drop-down menu labelled *Select a modem*, choose the name of the modem with which you want to connect, and then choose the **Configure** button to display the *Device Properties* dialog box.

   The Omnii communicates via *Bluetooth* to your *Bluetooth* equipped cellular telephone and retrieves the parameters for the *Device Properties* dialog box. Omnii then disconnects.



9. Under the *Call Options* tab, turn off **Cancel the call if not connected within,** and press [Enter] to save your changes.



10. In the *Modem* dialog box, choose the **Next** button to display the *Phone Number* dialog box.

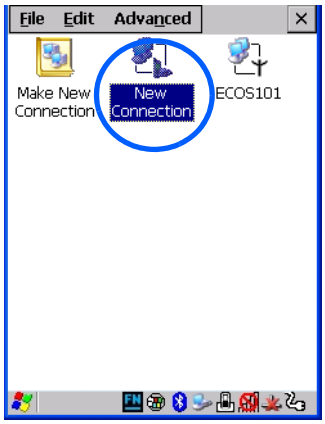
The phone number you enter is network carrier dependent. Once you've specified all the necessary information, choose the **Finish** button.

11. In the *Control Panel*, choose the **Dialing** icon.

12. The values in the *Dialing Properties* dialog box need to be edited according to your network carrier specifications.

Once you've edited this dialog box to reflect your network carrier requirements, press **[Enter]** to save your changes.

13. At this point, return to the *Control Panel,* and choose the **Network and Dial-up Connections** icon.
14. In the network connection window, the new network configuration — in this case, *New Connection* is displayed. Tap on the **new** icon.



When you tap on your new connection, an onscreen message indicates the status of your connection: *connected*, *disconnected*, *error messages*, and so on.

Certificates

This program provides access to the Certificate Manager and Stores. The Certificate Manager displays the certificates in the Windows Certificate Store, and allows you to import, delete, and view these certificates. Omnii checks that the certificate has been digitally signed by a certification authority that the Omnii explicitly trusts. This option is used in conjunction with 802.1x authentication to enhance Omnii security.

- In the *Control Panel*, choose the **Certificates** icon.

Your Omnii has certificates preinstalled in the computer. *My Certificates* is the repository for the device's personal certificate store, *Other Authorities* is the repository for the intermediate certificate store, and *Trusted Authorities* is the repository for the Trusted Root certificate store.

You can import or remove certificates, and view certificate information for any listing, including names, dates, serial numbers, etc.

For a detailed description about Certificate setup for both the server and client-side devices (Omnii Hand-Held Computers), refer to the following website:

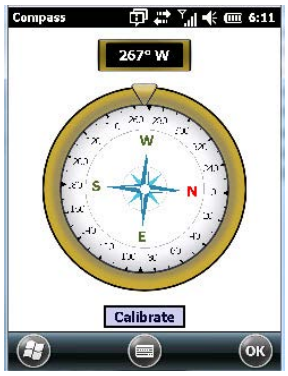
http://technet.microsoft.com/en-us/windowsserver/dd448615.aspx

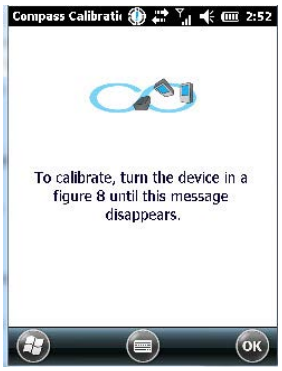
Compass

Like all compasses, the Omnii digital compass indicates the direction in which the unit is pointed. If you find that the compass is inaccurate, you may need to calibrate it.

- In the *Control Panel*, choose the **Compass** icon.

- Tap on the **Calibrate** button and follow the directions to calibrate the compass. Make certain that you perform the figure *8* indicated in the instructions in a fairly wide loop to better ensure successful calibration.





When the compass recalibration is complete, a message appears on the Omnii screen indicating successful calibration.

NOTE The accuracy of the digital compass is affected by the following:

a) close proximity to large magnets or metal structures, and

b) internal scanner/imager activation.

Data Transfer between Omnii and a PC

Data transfer options vary slightly depending on the type of operating system installed in your PC.

For Windows XP SP2 operating systems or earlier, Microsoft® ActiveSync® connectivity software can be used to connect your Omnii to PCs.

If the Windows Vista®, Windows 7 or later, operating system is installed in your PC, ActiveSync is not required to transfer data between your Omnii and your PC.

By using a Snap Module or Desktop Docking Station with your Omnii, you can connect to a PC with a cable to:

- View Omnii files from Windows Explorer.
- Drag and drop files between the Omnii and the PC in the same way that you would between PC drives.
- Back up Omnii files to the PC, restore them from the PC to the hand-held again, etc.

Uploading Data in a Docking Station

The Desktop Docking Stations allow your hand-held to upload transaction data to a server computer when a radio link is not available. When the Omnii is properly inserted in a docking station, a dock icon is displayed in the taskbar at the bottom of the unit screen. For detailed information, refer to “Desktop Docking Stations - Models ST4002 and ST4003” on page 4-11.

Using Microsoft ActiveSync

NOTE If you use a serial port to connect devices like the Omnii to your desktop computer, the connection may not succeed because ActiveSync has trouble connecting at non-default baud rates.

To work around this problem, set the ActiveSync baud rate on the desktop to use the same baud rate as the device. You can set the baud rate by editing the registry on the desktop host computer, as detailed in the steps outlined at the following website:

http://support.microsoft.com/kb/324466

To install ActiveSync, follow the step-by-step instructions provided with the program setup wizard. For details, go to the following website and type the name into the search box:

http://www.microsoft.com/downloads/en/default.aspx

Using Windows Mobile Device Center

If you are running *Windows Vista*, *Windows 7,* or later, your data transfers do not require ActiveSync. Instead, you will need to download *Windows Mobile Device Center*. For instructions, go to the following website and type the name into the search box:

http://www.microsoft.com/downloads/en/default.aspx

To transfer data between your PC and your hand-held:

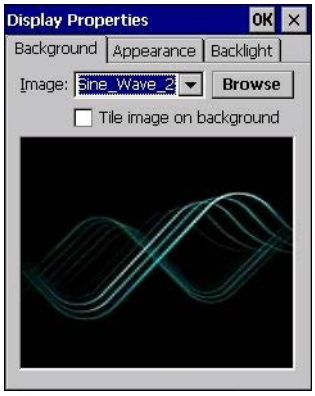
- Tap on **Start>Computer** to display the drives. The Omnii will be visible here.
- Open drives, files and folders as you would on your PC.

Display Properties

- In the *Control Panel*, choose the **Display** icon.

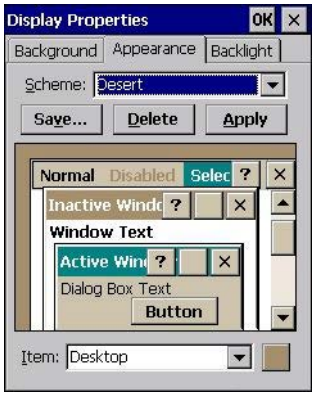
Background

- In the *Display Properties* dialog box, open the **Background** tab. This dialog box allows you to customize your background image.



Appearance

- In the *Display Properties* dialog box, open the **Appearance** tab. This dialog box allows you to customize the display colour scheme.

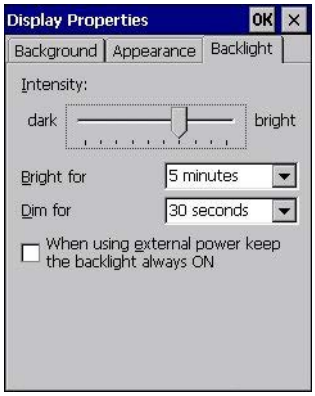


Backlight

The backlight is activated for a configurable amount of time. The *Display Properties* dialog box in the *Control Panel* allows you to specify the intensity of the backlight along with how long the backlight remains on when the unit is not in use (no key press, scanner trigger, etc.).

NOTE Keep in mind that this option may be restricted to supervisory use only.

- In the *Display Properties* dialog box, open the **Backlight** tab.



NOTE Backlight changes take effect immediately. You do not need to reset the unit.

To maximize battery run time, keep the display backlight brightness and active durations as low as possible.

Intensity

This parameter is used to adjust the light intensity of the Omnii backlight. Sliding the bar to the left lowers the light intensity, and sliding it to the right raises the intensity.

Bright For

The value chosen from this drop-down menu determines the duration of time that the backlight stays on at the configured intensity after the last user action (keypress, scan trigger).

Dim For

The value chosen from this drop-down menu determines the duration of time that the backlight stays on at half the configured intensity (dimmed backlight) after expiration of the Bright For delay and as long as no user action takes place (such as a keypress or scan trigger). At the expiration of the Dim For duration, the display backlight shuts off.

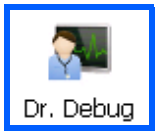
External Power Check Box

When you select the check box next to *When using external power keep the backlight always ON*, the backlight remains ON at the configured intensity when the Omnii is operating with external power (not battery power). If the Omnii is drawing power from its battery, this option is ignored and the other parameters defined in *Display Properties* dialog box take effect.

Dr. Debug

Dr. Debug is an error diagnostic and troubleshooting tool.

- Tap on **Start>Settings**>**Control Panel**. Tap on the **Dr. Debug** icon.



Status

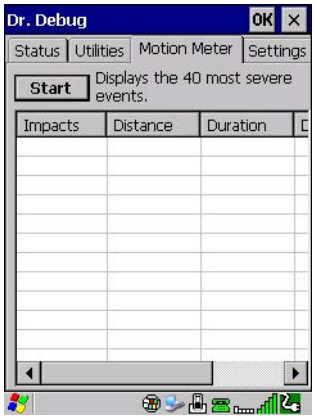
This tab indicates the status (on/off) of the debug engines. Tapping on **Browse logs** displays error logs for your review. The logs should be used as reference when working with Motorola Technical Support personnel.

Utilities

The *Utilities* tab can be used to log network traffic. When you tap on the **Start** button, debug data is collected so that, if necessary, it can be forwarded to a Motorola technician for evaluation.

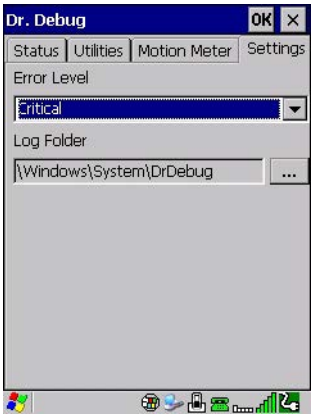
The *Utilities* tab can also be used to log heater control logic board information.

Motion Meter



Tapping on the *Start* button enables the *Motion Meter* feature. Once enabled, this applet records the number of impacts the Omnii has sustained, the distance of the fall in meters, the duration in 10^{ths} of a second, and the date and time that the event occurred. The top 40 events are logged in a non-volatile location and can be used for diagnostic purposes by Motorola or the site administrator.

Settings

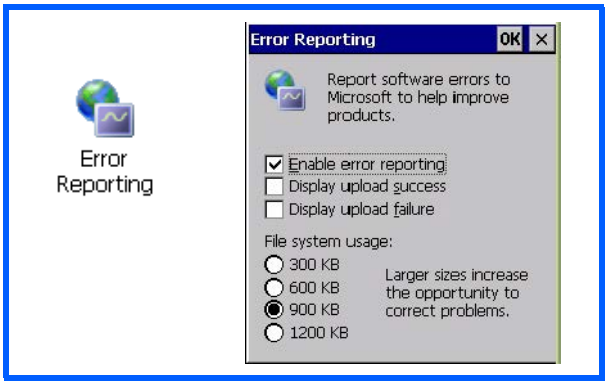


- Choose an **Error Level** from the drop-down menu.
- To change the location where debug information will be stored, tap on the button to the right of the *Log Folder* option.

Error Reporting

Error Reporting allows you to enable or disable Microsoft error reporting prompts.

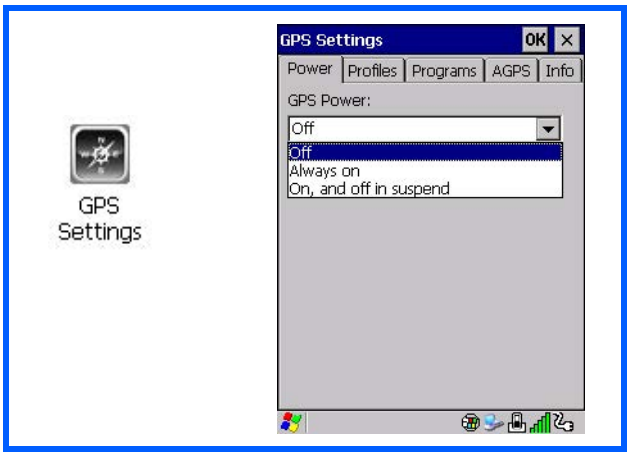
- Tap on **Start>Settings**>**Control Panel**>**Error Reporting** icon to access your options.



GPS (Global Positioning System) Settings

This applet allows you to define how the GPS module operates. You can determine when the GPS module is powered and operating, and choose from a set of GPS profiles built into the modem. You can also set up the AGPS Manager (an assisted GPS utility).

- Tap on **Start>Settings>Control Panel>GPS Settings** icon.

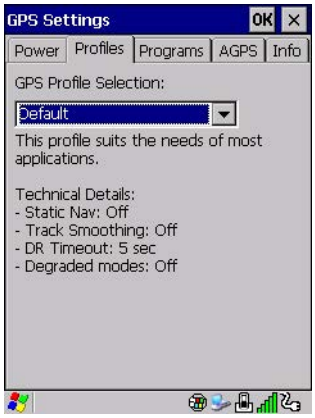


Power

This tab allows you to dictate how the GPS module behaves. The *GPS Power* drop-down menu is used to control when the GPS is powered on and off.

- *Off* – the GPS module is left off, always.
- *Always on* – the GPS module is powered on at all times regardless of the power state of the hand-held (suspend).
- *On, and off in suspend* – the GPS module is powered on, but if the Omnii is in suspend mode, the GPS module is turned off.

Profiles



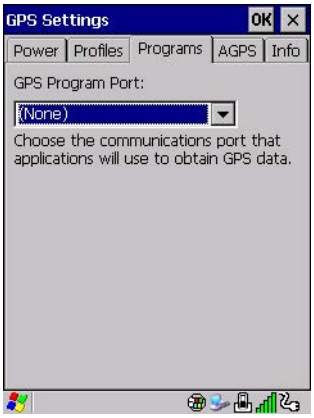
Tapping on the *GPS Profile Selection* drop-down menu allows you to choose an appropriate profile: *Default*, *Automotive* or *Pedestrian*.

- *Default* profile is a good general profile suitable for most uses.
- *Automotive* profile is designed for in-vehicle use, providing quick location updates as the vehicle moves. When the GPS module is set to this profile and the vehicle enters an area such as a tunnel where satellite coverage is interrupted, it *will* attempt to predict the vehicle position.
- *Pedestrian* profile is designed for those using the GPS module while walking. It takes into account the slower pace of the pedestrian when mapping the location of the user. When the GPS module is set to this profile and the operator moves into an area where satellite coverage is interrupted, the GPS module *will not* attempt to predict the operator's movement.

Programs

Tap on the GPS Program Port drop-down menu to choose the communication (COM)

port that the GPS software will use to communicate with the GPS receiver.



AGPS

To determine your location, a GPS module receives data from three or more GPS satellites in fixed orbit around the Earth. The GPS module triangulates your location based on the time it takes for signals to get to and from the satellites. This works well in fairly clear areas, outdoors for example. However, if you're attempting to triangulate your location in city centres where signals bounce off tall concrete buildings or from within a building, the GPS module will have greater difficulty calculating a fix.

AGPS reduces Time To First Fix (TTFF) and increases the likelihood of finding and keeping a fix in poor coverage areas such as indoor sites. AGPS downloads satellite ephemeris (orbital) data to the Omnii periodically through Wi-Fi or WWAN. The downloaded data is used by the GPS module to speed the process of getting a fix.

Update

- Click on the **Update** button to download *Extended Ephemeris (EE)* files from a secure host on the Internet using any interface that has an Internet connection. These files contain several days worth of ephemeris (orbital) data that can be used if the satellite broadcast ephemeris is not available.

The *Status* field above the *Update* button displays the progress of the download, and once successfully downloaded, the *Status* field will read *Idle*.

Settings

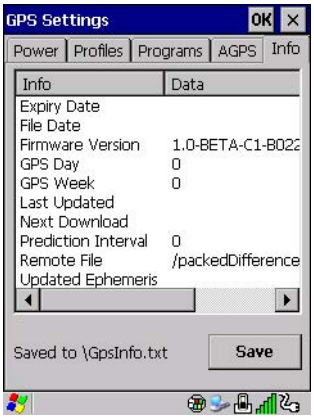
- Click on the **Settings** button to define the *AGPS server connection settings*.

The *AGPS server connection settings* drop-down menu allows you to choose from two settings: *Use default settings* and *Use custom settings*.

The *Use default settings* option is generally acceptable for most applications. Note that aside from the *Update* field in which you can choose how long the fix is stored in your Omnii, the field values cannot be edited.

The *Use custom settings* option is generally used to configure devices that will have access only to an *intranet* rather than the *Internet* and should only be altered with the assistance of qualified Motorola personnel. They will be able to help you configure your Motorola devices and web server to retrieve the ephemeris data.

Info



This tab provides general information about the GPS module such as the firmware version, the date on which files were last updated, and so on. If GPS module support service is required, you may be asked to tap on the **Save** button in this tab and forward the information to Motorola support staff.

Imager & Camera Settings

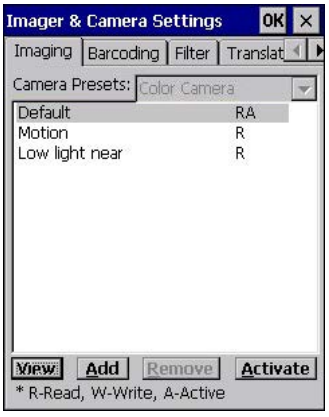
The Imagers applet is used to create, modify, delete, and activate imager and camera settings. The principle uses of the applet are to decode barcodes and to capture images. A *Demonstration Application* is provided to demonstrate how the imager works. Refer to “Demo” on page 2-23 for details.

Refer to Appendix B: “Imager & Camera Settings” for configuration details.

- In the *Control Panel*, choose the **Imagers** icon.

NOTE This icon is only displayed when the appropriate imager is installed in your Omnii. If there is an imager installed but this icon is not present, additional software (ICS) may need to be installed.

To enable a newly-installed imager, Press and hold down the ***[FN]*** key and the ***[Enter/Power]*** key simultaneously for a minimum of three seconds.



Input Panel

The Omnii is equipped with a Soft Input Panel (SIP). Shown below is the standard Microsoft SIP, accessed from the Control Panel.

Tapping on the Input Panel button displays a soft input panel (soft keyboard) that can be customized using the Input Panel dialog box.

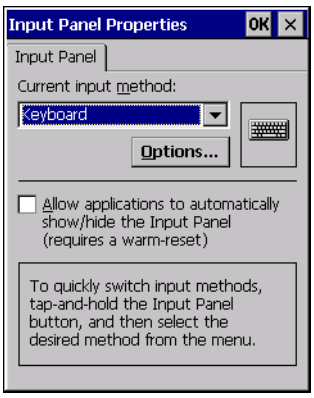
IMPORTANT If the Input Panel button icon is not visible in the taskbar, from the *Start* menu, tap on *Settings>Taskbar* and *Start Menu*. Tap the check box next to *Show Input Panel Button*. To remove this icon from the taskbar, tap in the check box to erase the check mark.

The soft keyboard operates just like a standard keyboard except that rather than pressing a key, you tap on letters, numbers, modifier keys, etc. on the Omnii screen.

To customize the appearance and behaviour of the soft keyboard:

Tap on the **Input Panel** icon in the *Control Panel*.

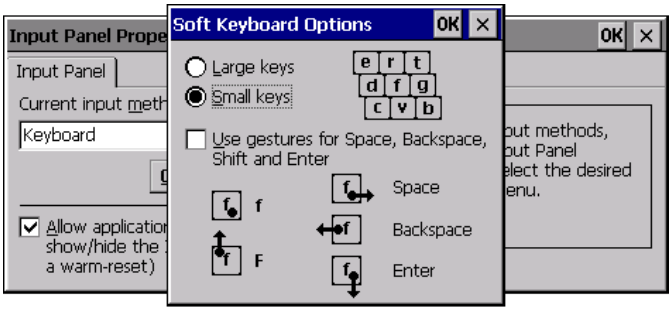
Figure 3-2 *Input Panel Properties*


Input Panel Properties
OK
Input Panel
Current input method:
Keyboard
Options...
Allow applications to automatically show/hide the Input Panel (requires a warm-reset)
To quickly switch input methods, tap-and-hold the Input Panel button, and then select the desired method from the menu.

- Tap on the Options button to change the appearance of your soft keyboard.

NOTE You can also display this dialog box by double-tapping on the Input icon in the far-right corner of the taskbar.

Figure 3-3 *Soft Keyboard Options*



Keyboard Properties

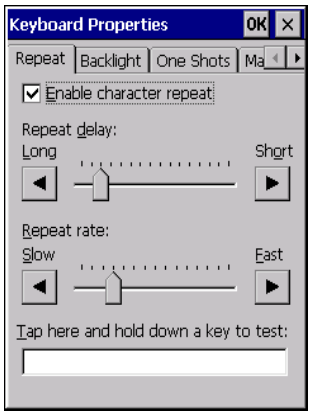
This icon displays the *Keyboard Properties* dialog box in which you can adjust the repeat rate of the keys, the intensity of the keyboard backlight and the behaviour of the [FN] and [SYM] modifier keys. This dialog box also allows you to define macro keys and Unicode characters.

- In the *Control Panel*, choose the **Keyboard** icon.

Key Repeat

NOTE These settings apply when a key is held down continuously.

- In the *Keyboard Properties* dialog box, open the **Repeat** tab.



Repeat Delay

The value assigned for this parameter determines the delay in milliseconds between repeat characters. Sliding the *Repeat Delay* bar to the left increases the delay between key repeats, and sliding the bar to the right shortens the repeat delay time.

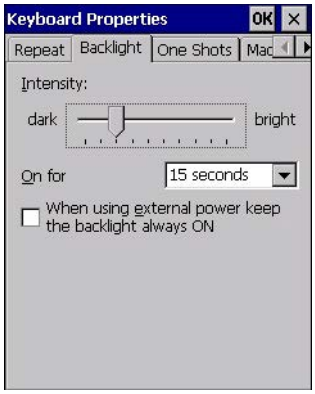
Repeat Rate

The value assigned for the *Repeat Rate* parameter determines how quickly the key you press repeats and is measured in characters per second (cps). Sliding the bar to the left slows the repeat rate, and sliding the bar to the right increases the repeat rate.

NOTE Use the field at the bottom of this dialog box to test the repeat delay and rate settings you've chosen.

Keyboard Backlight

- In the *Keyboard Properties* dialog box, open the **Backlight** tab.



Intensity

This parameter is used to adjust the light intensity of the Omnii keyboard backlight. Sliding the bar to the left darkens the keyboard backlight intensity, and sliding it to the right lightens the intensity.

NOTE The keypad backlight maximum brightness will decrease over time as it ages. Use mid-range intensity settings when possible to extend the backlight lifespan. When the backlight starts to dim, use this parameter to make it brighter.

ON For

The value chosen from this drop-down menu determines the duration of time that the keyboard backlight stays on after the last user action (keypress or scan trigger).

NOTE Tapping in the check box next to ***When using external power, keep the backlight always ON*** forces the keypad backlight to remain on when the unit is operating with external power.

Keyboard One Shot Modes

- In the *Keyboard Properties* dialog box, open the **One Shots** tab.

The options in this tab allow you to determine how modifier keys on your Omnii behave. For each modifier key — [ALT], [SHIFT], [CTRL], [FN], and [SYM] — you have the following options in the drop-down menu: *Lock*, *OneShot*, and *OneShot/Lock*.

NOTE Keep in mind that checking the taskbar lets you know whether or not these keys are locked on. For example, if the [FN] key is locked on, the taskbar at the bottom of the screen displays it underlined. If this key is displayed without the underline in the taskbar, you'll know that the key is not locked. It will become inactive following a key press.

IMPORTANT Once you've assigned a One Shot mode to a modifier key, you need to tap on the OK button at the top of the tab to activate your selection.

Lock

If you choose *Lock* from the drop-down menu, pressing a modifier key once locks it on until you press the modifier key a second time to unlock or turn it off.

OneShot

If you choose *OneShot*, the modifier key remains active only until the next key is pressed.

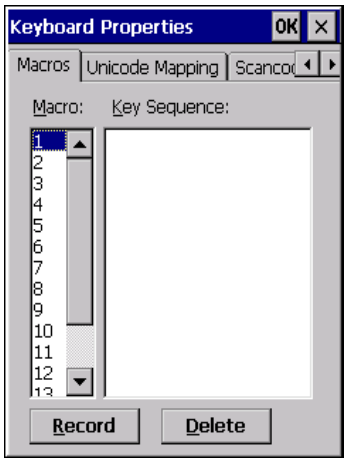
OneShot/Lock

OneShot/Lock allows you to combine these functions. When you choose this option and you press the modifier key once, it remains active only until the next key is pressed.

If you press the modifier key twice, it is locked on, remaining active until the modifier key is pressed a third time to turn it off.

Keyboard Macro Keys

- In the *Keyboard Properties* dialog box, open the **Macros** tab.



A macro has 200 programmable characters (or "positions"). The macro keys can be programmed to replace frequently used keystrokes, along with the function of executable keys including [Enter], [BACKSPACE] and [DEL] ([FN]-[BACKSPACE]), function keys and arrow keys.

Recording and Saving a Macro

You can program up to 6 physical macro keys, depending on your keyboard layout. You can also increase the number of virtual macro keys up to 15 using *Scancode Remapping* (for details, see "Scancode Remapping" on page 3-37).

- In the *Macro* menu highlight a macro key number, for example macro 1, to assign a macro to macro key [M1]. Choose the **Record** button.

A message screen is displayed instructing you to *Enter Key Strokes to Record*.

- Type the macro sequence you want to assign to the Macro key. You can type text and numbers, and you can program the function of special keys into a macro.
- When you've finished recording your macro sequence, press the key sequence: [CTRL] [ALT] [Enter], or choose the **Stop Recording** button.

A new screen *Verify Macro* displays the macro sequence you created. The *Save* button is highlighted.

- Press **[Enter]** to save your macro, or highlight CANCEL and press **[Enter]** to discard it.

Executing a Macro

To execute a macro:

- Press the macro key to which you've assigned the macro.

Deleting a Macro

To delete a macro:

- In the *Macros* tab, highlight the *macro number* you want to delete.
- Choose the **Delete** button.

Unicode Mapping

- In the *Keyboard Properties* dialog box, open the **Unicode Mapping** tab.

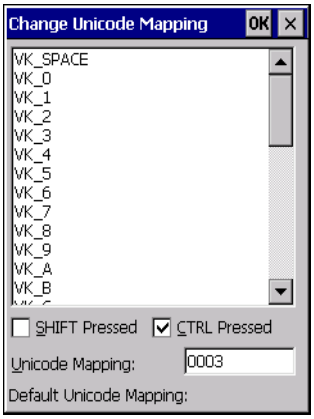
The *Unicode Mapping* tab is used to map combinations of virtual key values and [CTRL] and [SHIFT] states to Unicode™ values. This tab shows the configured Unicode character along with the Unicode value. For example, the sample screen above shows “a (U+0061)” indicating that the character “a” is represented by the Unicode value “0061”, and so on. Keep in mind that Unicode configurations are represented as hexadecimal rather than decimal values.

All user-defined Unicode mappings are listed in the *Unicode Mapping* tab in order of virtual key value, and then by order of the shift state. If a Unicode mapping is not listed, the Unicode mapping is mapped to the default Unicode value.

Adding and Changing Unicode Values

IMPORTANT Changes to Unicode mappings are not saved until you exit the Keyboard Properties dialog box.

- Choose the **Add/Change** button.



- Highlight a value in the Unicode mapping list. In the sample screen above, a value will be assigned to virtual key 0 (VK 0).
- Position the cursor in the *Unicode Mapping* field, and type a **Unicode value** for the highlighted key.

NOTE To add a shifted state, [SHIFT] and/or [CTRL], press [TAB] to position the cursor in the check box next to *SHIFT Pressed* and/or *CTRL Pressed*. Press [SPACE] to select the shift state you want to assign.

Removing Unicode Values

- In the *Unicode Mapping* tab, highlight the item you want to delete, and choose the **Remove** button.

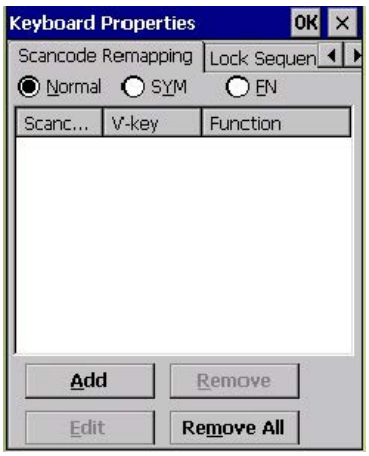
Scancode Remapping

A scancode is a number that is associated with a physical key on a keyboard. Every key has a unique scancode that is mapped to a virtual key, a function or a macro. *Scancode Remapping* allows you to change the functionality of any key on the keyboard. A key can be remapped to send a virtual key (e.g. VK_F represents the *F* key; VK_RETURN represents the [Enter] key, etc.), perform a function (e.g. turn the scanner on, change volume, etc.) or run a macro.

There are three different tables of scancode mappings: the *Normal* table, the *FN* table and the *SYM* table.

NOTE When using the Mobile Devices SDK Developers' Guide (PN 8100016), note that the [ORANGE] key is interchangeable with the [SYM] key. Similarly, in the context of the scancode mapping tables, Orange is interchangeable with SYM.

The *Normal* table defines unmodified key presses; the *FN* table defines key presses that occur when the [FN] modifier is on; the *SYM* table defines key presses that occur when the [SYM] modifier is on. The default mappings of these scancodes can be overwritten for each of these three tables using the *Scancode Remapping* tab accessed from the *Keyboard Properties* dialog box.



The first column in the *Scancode Remapping* tab displays the scancodes in hexadecimal. If the scancode is remapped to a virtual key, that virtual key is displayed in the next column labelled V-Key. A virtual key that is Shifted or Unshifted is displayed in the third column labelled Function.

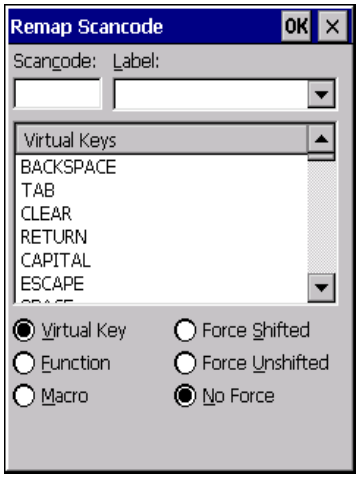
If the scancode is remapped to a function or a macro, the first and second columns remain blank while the third column contains the function name or macro key number (e.g., Macro 2).

Adding a Remap

To add a new remapping:

- Choose the **Add** button at the bottom of the dialog box.

The *Remap Scancode* dialog box is displayed.



- Type the scan code in hexadecimal in the field labelled *Scancode*.

NOTE The Label field displays the default function of the scancode you are remapping.

Virtual Key, Function and Macro

The radio buttons at the bottom of the dialog box allow you to define to what the scan code will be remapped: Virtual Key, Function or Macro.

When *Virtual Key* is selected, you can choose to force [SHIFT] to be *on* or *off* when the virtual key is sent. If *No Force* is selected, the shift state is dependent on whether the shift state is on or off at the time the virtual key is sent.

When *Function* is selected, a list of valid functions appears in the dialog box.

When *Macro* is selected, the macro keys available on your unit are listed in the dialog box.

- Choose **Virtual Key**, **Function** or **Macro**.
- Choose a function from the *Function* list in the dialog box, and tap on **OK**.

Editing a Scancode Remap

To edit a scancode:

- In the *Scancode Remapping* tab, tap on the remap you want to edit.
- Tap on the **Edit** button, and make the appropriate changes.
- Tap on **OK** to save your changes.

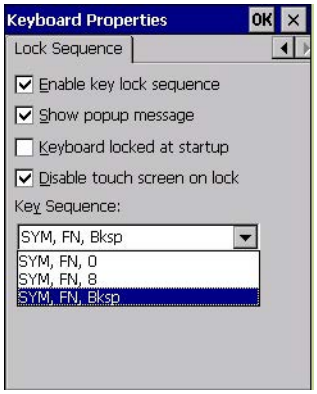
Removing a Remap

To delete a remap:

- In the *Scancode Remapping* tab, highlight the scancode you want to delete, and tap on the **Remove** button.
- Tap on **OK**.

Lock Sequence

The *Lock Sequence* menu allows you to lock the Omnii keyboard to prevent keys from being pressed accidentally when, for example, the unit is inserted in a holster.



- To lock the keyboard, tap in the check box next to *Enable key lock sequence*.
- Tap in the check box next to *Keyboard locked at startup*.
- In the *Key sequence* drop-down menu, choose the key sequence you will need to type to unlock the keyboard.

NOTE It is useful to leave the *Show popup message* enabled (default) so that anyone attempting to use the keyboard will see the key sequence they will need to enter to unlock the keyboard displayed on the screen.

A *locked keyboard* icon is displayed in the softkey bar when the keyboard is locked.

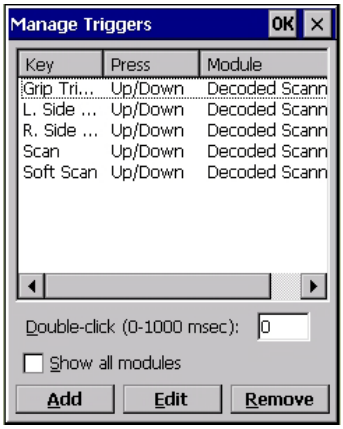
- Type the key sequence to unlock the keyboard.

Manage Triggers

Allows users to configure how barcode scanners and other devices such as RFID readers are triggered. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.

- In the *Control Panel*, choose the **Manage Triggers** icon.

- In the *Manage Triggers* screen you'll see a list of trigger mappings.



Trigger Mappings

A trigger mapping is an association between a particular key on the keyboard and a driver or application, the module(s) — sometimes referred to as trigger consumer(s) — of the trigger source. Along with keyboard keys, the external trigger (scan button) is software-based. When the specified key is pressed, the owner (for example, a decoded scanner) is sent a message.

IMPORTANT It is not possible to have two or more identical mappings — for example [F1] cannot be mapped to the Non-Decoded Scanner twice — even if the trigger type is different.

A keyboard key that is used as a trigger source will no longer generate key data, or perform its normal function. For example, if the space button is used as a trigger source, it will not be able to send space characters to applications.

Double-Click

When a key is pressed and released, then pressed again within the configured time (between 0 to 1000 msec), a double-click occurs. See also “Trigger-Press Type” on page 3-42.

Show All Modules

By default, the trigger mapping list only shows active mappings. Mappings for drivers or applications that are not currently active are not normally displayed. By checking this check box, all mappings, both active and inactive, are displayed.

Add

Tapping this button brings up the *Add Mapping* dialog (see “Add and Edit Trigger Mapping” on page 3-42), so that you can add new trigger mappings.

Edit

Tapping this button brings up the *Edit Mapping* dialog (see “Add and Edit Trigger Mapping” on page 3-42), so that you can edit existing trigger mappings.

Remove

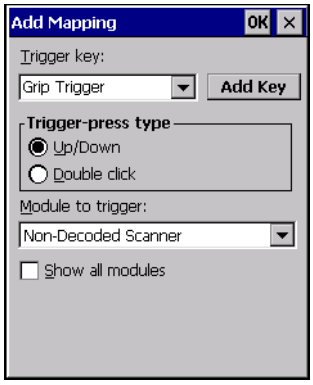
Tapping this button removes an existing mapping.

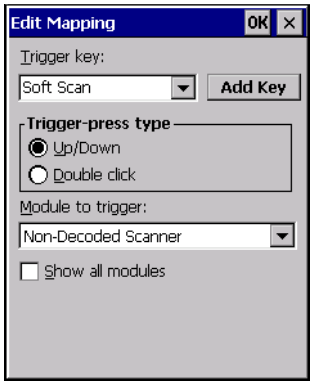
OK

The *OK* button in the top right of the *Manage Triggers* screen saves all changes made. If the cancel button *X* is tapped instead, or the [ESC] key is pressed, all changes made will be discarded.

Add and Edit Trigger Mapping

These dialogs allow you to add and edit trigger mappings.





Trigger Key

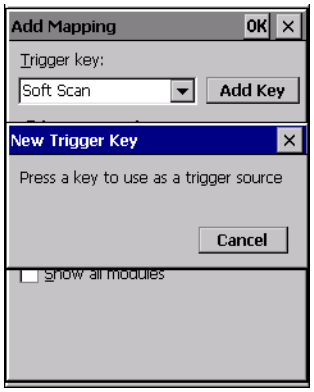
This drop-down list allows you to specify the source of the trigger events, such as the *Soft Scan*, *Left Scan*, etc., for the trigger module selected.

NOTE It is possible to map the same source to different modules (trigger consumers) — for example, to both the Imager and Non-Decoded Scanner. If so, both devices/operations will occur simultaneously. This is not recommended in most cases, especially with devices such as Imagers or RFID Readers.

It is also possible to map different sources to the same module (trigger consumer) — for example, two different trigger keys can be mapped to the RFID File System.

Add Key

Only existing trigger sources are shown in the Source combo-box. To add a new source to this list, tap on the **Add Key** button. A dialog will pop up and allow you to select the keyboard key to use as a trigger source.



Trigger-Press Type

You can enable either an *Up/Down* or *Double Click* response to a trigger press. Normally, when a trigger (keyboard key, etc.) is pressed and released, a “trigger down” event is sent to the owner — that is, the application receiving the trigger press information — followed by a “trigger up”. If *Double Click* is chosen in this menu, when the trigger is pressed, released, and then pressed again, a “double-click” event will have occurred. If a mapping with the type *Up/Down* has also been configured for the same source, it will only receive the first set of trigger events.

Module Trigger

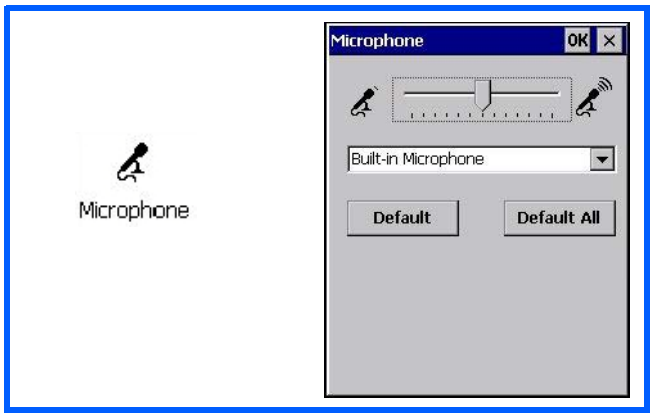
This identifies the driver or application receiving the trigger presses.

Show All Modules

By default, inactive owners are not shown. By checking this check box, all owners, both active and inactive, are displayed.

Microphone

- In the *Control Panel*, choose the **Microphone** icon. Use this dialog box to adjust the gain for the specific microphones associated with your hand-held.



- Tap on the drop-down menu, and choose the microphone for which you want to adjust the gain.
- Slide the microphone tab to the left to decrease the gain and to the right to increase the gain.

Tapping on the *Default* button sets the current microphone you've chosen to the default gain. Tapping on *Default All* sets *all* microphones listed to their default gain.

Open TekTerm

Open TekTerm is a powerful emulation application ideally suited for real time data transaction applications associated with mainframes and servers. The Omnii includes unique features that support Open TekTerm, a Motorola application that has the ability to maintain multiple simultaneous sessions with a variety of host computers. For detailed information, please refer to the *Open TekTerm Software User Manual*, PN 8000073.

PartnerUp

This app displays a number of pre-loaded applications. Tapping on an app in the list takes you to an associated web site.

The operator can then install the application. If a license is required, it can be obtained by sending an e-mail to the software license mailbox or by contacting a Sales Representative from the Motorola contact web page.

http://www.motorolasolutions.com/US-EN/Pages/Contact_Us/?WT.mc_id=psion_us_about_contact_psion-offices

Additional pieces of software such as a server must be obtained through Motorola.

Tapping on a preloaded client in the PartnerUp screen displays a drop-down menu from which the operator can choose from an array of related options.

Pocket PC Compatibility

The Omnii supports the AYGShell API set that allows Pocket PC-compatible applications to run on the hand-held. Windows Embedded CE includes application programming interface (API) compatibility support for the Microsoft Windows Powered Pocket PC 2002 shell in units running Windows Embedded CE.

The website listed below describes the APIs exposed through AYGShell and the application compatibility between Windows Powered Pocket PC 2002-based applications and Windows Embedded CE based devices:

http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dncenet/html/WINCENET_CEPCC_App.asp

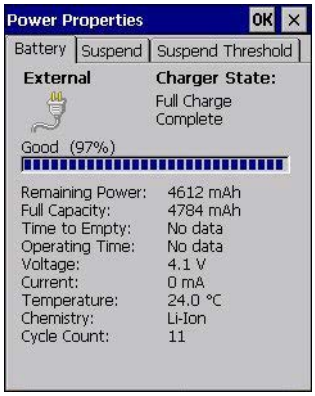
Power Properties

This icon displays a Power Properties dialog box that indicates the unit's battery capacity and allows you to manage battery use.

- In the *Control Panel*, choose the **Power** icon.

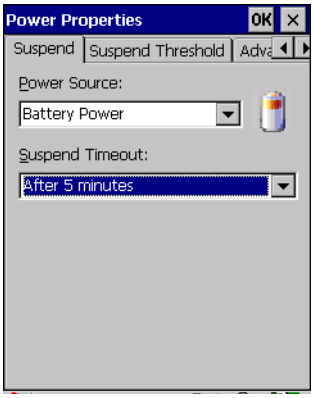
Battery Capacity

- In the *Power Properties* dialog box, open the **Battery** tab to view battery details.



Power Saving Suspend

- In the *Power Properties* dialog box, open the **Suspend** tab.



Power Source

This drop-down menu allows you to specify whether the unit is using *AC Power* or *Battery Power*.

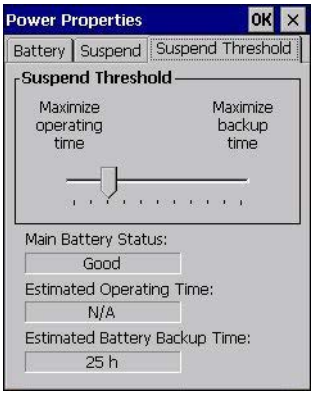
Suspend Timeout

IMPORTANT Motorola recommends setting the Suspend value to 3 minutes. To further reduce power consumption, carefully consider the duration of time that the display backlight is on (see “Backlight” on page 3-24).

When the Omnii is idle — not receiving any user input (a key touch, a scan, and so on) or system activity (serial data, an activity initiated by an application, and so on) — the hand-held uses the value assigned in the *Suspend Timeout* field to determine when the unit will go to sleep (appear to be off).

When the time in the *Suspend Timeout* field elapses without any activity, the unit enters *suspend* state. In suspend state, the Omnii CPU enters a sleep state, and wireless communication is shut off. The state of the device (RAM contents) is preserved. Pressing **[Enter]** wakes the system from suspend state.

Suspend Threshold and Estimated Battery Backup



The *Suspend Threshold* adjustment tells the system when to shut down when the battery drains. If you choose *Maximum Operating Time*, the unit will run until the battery is completely empty; the RAM is only backed up for a short period of time. If you choose *Maximum Backup Time*, the hand-held shuts off with more energy left in the battery so RAM can be backed up for a longer period of time.

IMPORTANT Selecting Maximum backup time will reserve approximately 20% of the battery capacity for memory backup. Once the battery is drained, the system RAM memory is lost and the unit must cold boot.

In most real-time transaction environments this is not a problem (it only takes a few seconds to cold boot). Batch transaction environments, where data is not saved to a non-volatile memory (such as an SD FLASH card), may need to pay particular attention to this parameter. Motorola does not recommend the storage of any valuable data in system RAM.

The Omnii Windows Embedded CE 6.0 environment does not store any critical data in RAM (such as the registry or file system).

If your application does not save data to RAM, Motorola recommends keeping the Suspend Threshold setting as low as possible to maximize battery run time.

The *Estimated Battery Backup* is the amount of battery power that has been reserved or set aside to protect data until a charged battery can be installed in the hand-held. When the battery capacity is depleted up to the *Estimated Battery Backup* reserve specified in the *Suspend Threshold* menu, the Omnii shuts off automatically and uses the reserve power to preserve the data stored on the computer. Once the Omnii shuts down, it cannot be switched on until a fresh battery is installed, or the unit is inserted in a docking station or cradle.

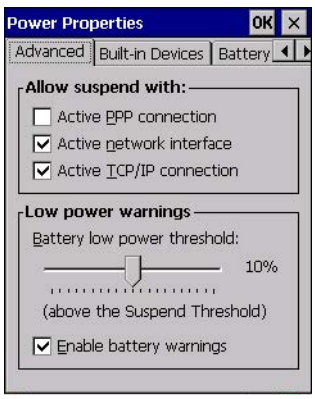
- Slide the **Suspend Threshold** button to the right to increase the battery capacity reserved for backup purposes. Data will be preserved to a maximum of 124 hours.
- Slide the **Suspend Threshold** button to the left to decrease the power reserved for backup purposes; this increases the Omnii operating time — the amount of time the unit will operate before shutting down — but reduces the power reserved for backup purposes to a minimum of 24 hours.

Internal super-capacitors will protect the data stored in the computer while the battery is swapped for a fully charged one.

IMPORTANT Once the battery is removed, the super-capacitors will preserve the data stored on the Omnii for approximately 4 minutes. It is critical that you install a charged battery before this time elapses.

Advanced

- In the *Power Properties* dialog box, open the **Advanced** tab.



Allow Suspend With

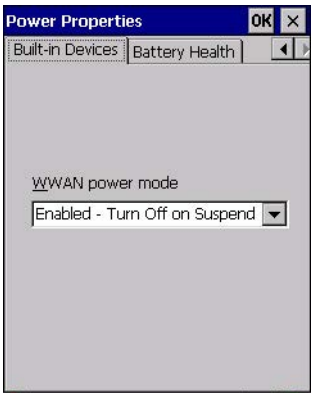
This menu allows you to specify whether or not your unit will enter Suspend Mode while it is operating with an active PPP connection, network interface or active TCP/IP connection.

Low Power Warnings

The sliding scale at the bottom of this menu allows you to specify the remaining battery capacity at which a warning message is displayed on the Omnii screen, from 0% to 20%.

Built-in Devices

- In the *Power Properties* dialog box, open the **Built-in Devices** tab.



WWAN Power Mode

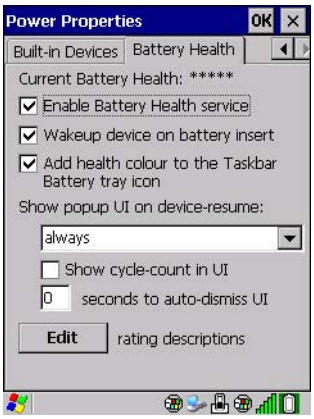
This menu allows you to enable power to your WWAN radio, and whether or not the radio will turn off when the Omnii enters Suspend Mode. To configure the radio, please refer to Appendix G: “Wireless Wide Area Network (WWAN) Settings”.

Battery Health

The Battery Health service provides an estimate of battery health based on a number of different measurements, beyond just capacity.

IMPORTANT Battery Health is an estimate and should not be depended on to provide a 100% account of battery condition.

- In the *Power Properties* dialog box, open the **Battery Health** tab.



Current Battery Health Meter

The Current Battery Health Meter default values are shown here as ***** (Excellent), *** (Used), and * (Battery should be replaced). If you tap on the battery icon in the taskbar, a pop-up screen will show the state of the battery. The image below shows the default *Excellent* status screen.

Enable Battery Health Service

This option allows you to enable the service. To access the menus after enabling the service, you will need to either wait until a resume from Suspend or restart the Omnii.

Wakeup Device on Battery Insert

When this option is enabled, whenever the battery is replaced the Omnii is powered up from Suspend and the current health of the battery is displayed.

Add Health Colour to the Taskbar Battery Tray Icon

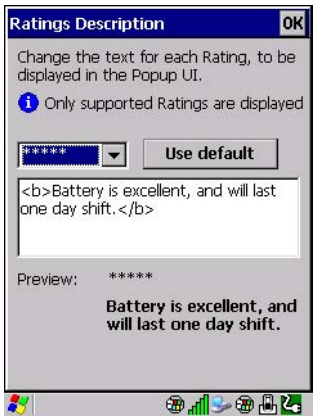
Enabling this option changes the background colour for the battery icon in the Taskbar, based on battery condition: *Green* (excellent), *Yellow* (used), and *Red* (battery should be replaced).

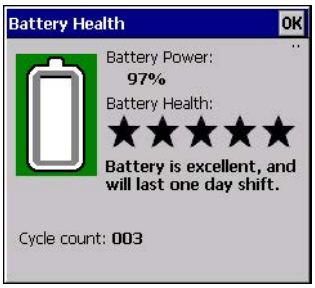
Show Popup UI on Device-Resume

You can decide when the battery status pop-up user interface (UI) will appear, for how many seconds, and whether the battery cycle count is displayed (**off** by default).

Edit – Changing Ratings Text

You can customize the ratings text with the *Edit* option. By enclosing your text within the html tag used for **Bold** <b> (or removing the tag to unbold the text), you can change the text that will appear in the pop-up battery status screen. For example, the default text “**Excellent**” can be changed to: “Battery is excellent, and will last one day shift.”...





Kiosk Access

Kiosk Access enables you to customize your computer settings, remove or add shortcuts to the desktop and Control Panel, and limit access to various different components on the computer and the system tray icons for security.

NOTE The Desktop theme can be changed from the default Windows Classic Shell to the Kiosk Shell either in the ***Kiosk Access*** settings (see "Other Shell Themes" on page 3-52) or by tapping on the Desktop icon ***Kiosk Shell*** (see "The Kiosk Desktop Shell" on page 2-27).

- In the *Control Panel*, choose the **Kiosk** icon.

When opening the *Kiosk* application, the *Kiosk Access* dialog will come up that enables you to either proceed to the *Kiosk Settings* menus, or change from you current Access mode to the other (Administrator or User). The computer must be reset following a change, and a confirmation will appear to enable you to continue or dismiss the change.

When opening the *Kiosk Settings* option, the following menus will be available:

Figure 3-4 *Kiosk Settings*

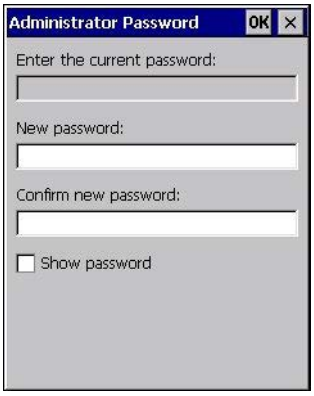
Administrator Password

By setting an Administrator Password, you can limit access to various different components on the computer and the system tray icons for security. The default security setting allows User access to all options, therefore restrictions and settings can be configured without setting a password.

NOTE If a setting or restriction is configured without setting an Administrator password, the following message is displayed: “!Administrator password is currently not set.” Once a password has been set, the message will disappear.

When an administrator password is set, the restricted options are accessed using a key combination. If a password has been set, the user would be prompted for the password.

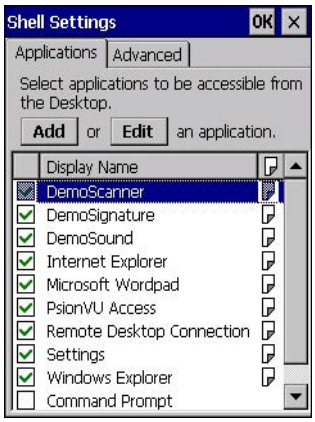
The option *Show Password* changes the displayed password from hidden (***) to readable.

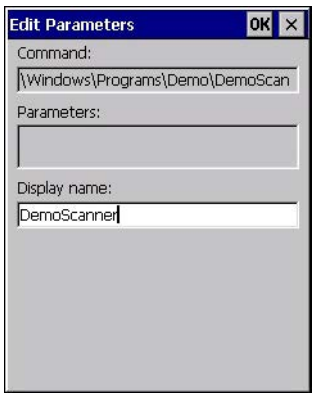


Shell Settings

The Shell Settings application has two menus: *Applications* and *Advanced*.

Applications





The Applications menu lists all the applications installed on the computer, alphabetically. The items checked in this view are shown on the Desktop.

The *Add* and *Edit* buttons allow you to search for and add an application to the list of items in the selection window. You can add a maximum of 18 applications, after which the Add option will be greyed out and the following message is displayed: “!Maximum 18 entries reached.”

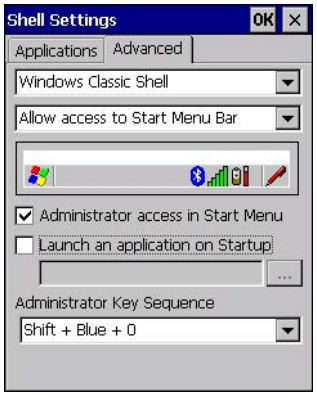
When you select an application and tap on Edit, you will see fields for Command, *Parameters*, and *Display Name*.

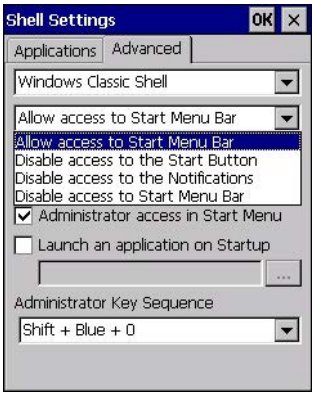
- **Command:** The *Command* field is prefilled with the path and name of the executable (*.exe*) or corresponding link (*.lnk*). If the selected file can’t be found (e.g. external memory card has been removed, files have been deleted), a message will be displayed at the bottom of the screen: *These files cannot be found.*
- **Parameters:** The *Parameters* option provides the option of adding extra parameters to the application (for *.exe* files only, not *.lnk*). For example, if the Command field is running “pword.exe” (Microsoft WordPad), the Parameters field could specify a document to open.
- **Display name:** This is an editable field which is prefilled with the name of the application.

Advanced

The Applications menu allows you to enable or disable some device functions.

Windows Classic Shell





The following options can be enabled or disabled in the Windows Classic Shell Desktop theme:

- **Start Menu Bar**: If disabled, access to both Start Menu and Notifications are disabled. The Notification tooltips will still display. Any changes made will occur after a device reset.
- **Start Button:** If disabled, access to the Start Button and Notifications are disabled. The Notification tooltips will still display.

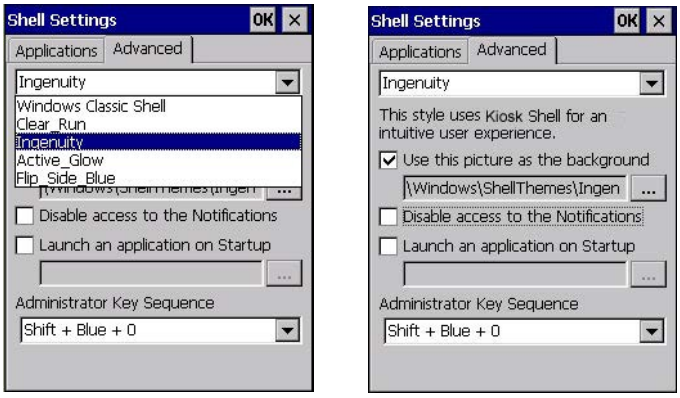
NOTE If “Disable access to the Start Button” is selected, but the “Kiosk Access by Key Sequence” remains unchecked, you will see the following status-message “!A Key Sequence is required when the Start Button is disabled.”, the check box will be auto-checked, and the focus will be set to the key-sequence selection.

- **Notifications:** If disabled, the Notifications tooltips will still display.
- **Administrator Access in Start Menu:** When this box is checked, the *Kiosk Access* program will be shown in the *Start Menu>Programs* list.

The following item is not optional:

- **Administrator Key Sequence:** Sets the key sequence to open *Kiosk Access*.

Other Shell Themes



The following options can be enabled or disabled in the Kiosk Shell Desktop themes (shown in the drop-down list as *Windows Classic Shell, Clear_Run, Ingenuity*, *Active_Glow*, and *Flip_Side_Blue*):

NOTE The Desktop theme can be changed from the default Windows Classic Shell to one of the Kiosk themes shown here — but by tapping on the Desktop icon ***Kiosk Shell*** (see “The Kiosk Desktop Shell” on page 2-27), the “Ingenuity” theme is automatically loaded. The computer must be reset in order for the shell to change.

- **Use this picture as the background:** You can select a picture as the Desktop background.
- **Notifications:** If disabled, the Notifications tooltips will still display.
- **Launch an application Startup:** A window is displayed listing all of the installed and added applications. Any applications selected will startup after a reboot.

The following item is not optional:

- **Administrator Key Sequence:** Sets the key sequence to open *Kiosk Access*.

Restrictions

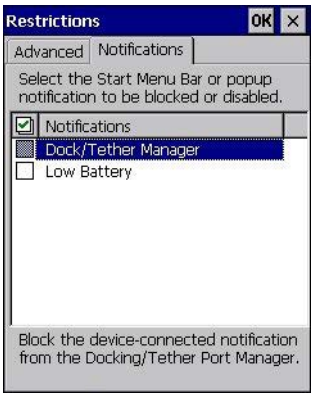
This section deals with items that are by default available to users but can be restricted by an administrator.

Advanced

The Advanced menu lists the system features you can restrict or block.

Notifications

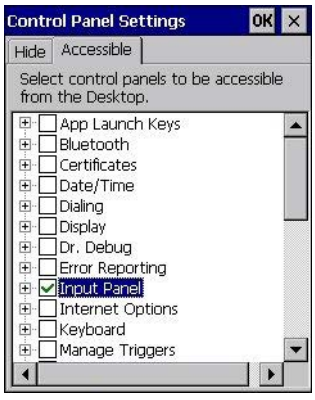
The Notifications menu allows you to block or disable notifications.



Control Panel Settings

In these menus you can set which applets and tabs you want to *Hide* in Control Panel, and which applets and tabs will be *Accessible* as a shortcut icon from the Desktop.

- You have the option of setting the entire applet or specific tabs within the applet as hidden or accessible. Any applet that can't be set is greyed out.



- You can add a maximum of 18 applications, after which the following message is displayed: "!Maximum 18 entries reached."

Import/Export to File

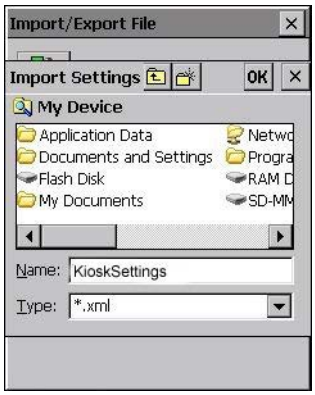
This option enables you to *Export* your settings file (*.xml*), and save it in the location of your choice. In addition, an Administrator has the option to *Import* these settings from one device to multiple devices *of the same operating system*.

IMPORTANT A copy of this file should also be saved in a central repository for all Motorola .xml files with a predefined name so that other Motorola utilities can locate it.

Tapping on the **Export** button will display a “Save As” Export Settings dialog, with the default name *Kiosk_Settings.xml*, which the Administrator can change even after it has been saved.

The *.xml* file contains all of the Kiosk configured settings, including the *Administrator Password*. When the file is imported to a device, the new password is applied immediately.

- Whether choosing to import or export files, the same file location options under *My Device* will be listed. Following the action, a message stating the success of the operation and the location of the file will be displayed.
- With the exception of the password, changes made to settings will take effect only after a warm reset. If further changes to the configuration are made, they will overwrite the changes caused by the import operation. After importing a file, a dialog will appear to enable you to reset now or later.



Remote Desktop Connection

Remote Desktop Connection, located in ***Start>Programs***, is an Omnii application used to connect to a Windows Terminal Server so that you can run a “session” on the Server machine, using the Omnii (Windows Embedded CE device).

Go to the following website to find information about setting up this connection:

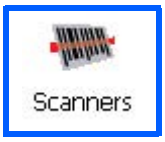
http://www.microsoft.com/en-us/download/default.aspx

or contact Motorola support services. Locate the office closest to you at: http://www.motorolasolutions.com/US-EN/Support/Psion+Services+and+Support?WT.mc_id=psion__support_

Scanners

The *Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor barcode scanner configuration and choose the barcodes your scanner will recognize. The parameters are preset with the default settings of the decoded scanner installed in the unit.

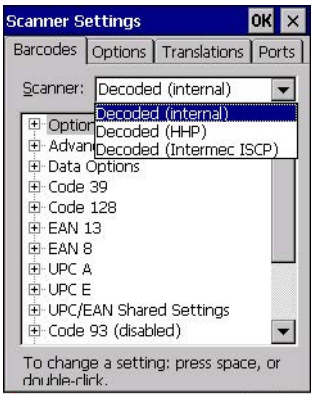
NOTE To enable a newly-installed scanner, press and hold down the [FN] key and the [Power] key simultaneously for a minimum of three seconds.



You can test the scanner to ensure that it is operating properly by pointing the scanner window at a barcode that your scanner was designed to decode — for example, a 1D UPC barcode or 2D barcode. Press the **SCAN** key or pistol trigger, and check for a valid decode on the hand-held screen.

For a listing of available scanners and their specifications, please refer to Appendix E: “Omnii Specifications”.

Barcodes



Scanner

The drop-down menu to the right of the *Scanner* option allows you to choose configurations for one of the following scanner types, depending on what is installed in/on your hand-held: *Decoded* (internal), *Decoded* (Intermec ISCP), *Imager* and *Non-decoded*.

The symbologies listed in the *Barcodes* tab change to reflect the scanner you choose and the barcodes it supports. Always defer to your barcode scanner’s programming manual when in doubt about the availability or settings for any parameter.

NOTE Your Omnii comes preconfigured from the factory for internal scanner types. The type of scanner installed can be determined from the ***System*** icon in the Control Panel, under the System Properties tab.

IMPORTANT To improve the decode speed and performance, enable (set to on) only those codes that are required by the application.

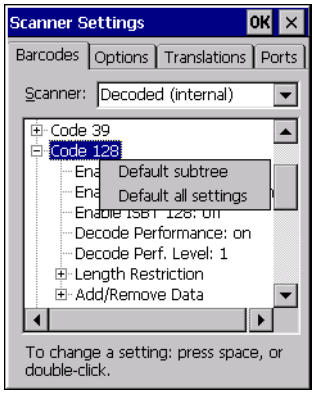
For information on configuring the barcode symbologies, see Appendix C: “Scanner Settings”.

Keep in mind that some barcode types are only available when an internal imaging scanner is installed. All internal scanners can be configured using these dialog boxes.

Restoring Default Settings

If you want to restore the factory defaults after making changes, the defaults can be applied to a selected parameter, sub-tree of parameters or all scanner parameters.

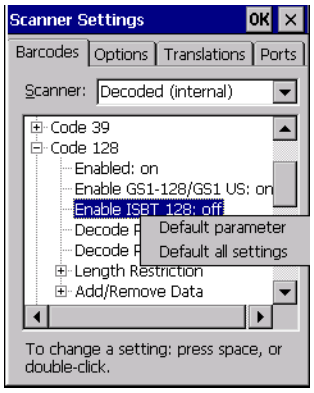
- Press and hold on a symbology (e.g., Code 128) to display a pop-up menu.



- Choose **Default subtree** to reset only the parameters in the symbology you selected, or choose **Default all settings** to reset all scanner parameters to default settings.

To reset a single parameter to its default setting:

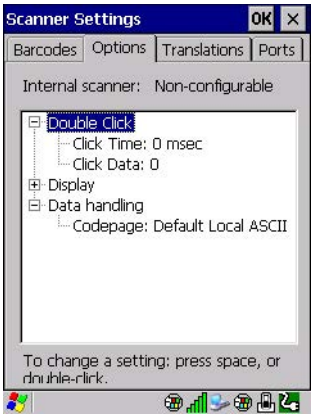
- Press and hold on the parameter you want to reset.



- Choose **Default parameter** to reset the parameter to the default setting.

Options

This tab allows you to tailor the double-click parameters, display, and data handling options associated with your scanner.



Double Click Parameters

Click Time (msec)

This parameter controls the maximum gap time (in milliseconds) for a double-click. If the time between the first and second clicks of the scanner trigger is within this time, it is considered a double-click. The allowable range is 0 to 1000. A value of zero disables this feature.

A double-click produces different results depending on whether or not a value is assigned in the “Click Data” parameter. When a value is not assigned for the “Click Data”, double-clicking the scanner trigger overrides the target dot delay set in the “Dot Time” parameter and initiates a normal scan sweep. If a value is assigned for the “Click Data” parameter, double-clicking the scanner trigger inserts the “Click Data” value rather than initiating a scan.

Click Data

This parameter determines which character is sent to the application installed in your Omnii following a double-click. A dialog box appears, asking that you press the key you want to insert. The ASCII/Unicode key value of the keypress is displayed.

Pressing the [ESC] key in this dialog box resets the data to zero.

Display Parameters

Scan Result

When this parameter is enabled, the type of barcode and the result of the scan appear on the screen. Note that this information is only displayed after a successful decode and is visible only while the scanner trigger is pressed. When the trigger is released, this information is cleared from the screen.

Scan Indicator

When this parameter is enabled, the laser warning logo appears on the display whenever the scanner is activated.

Scan Result Time (sec)

The value assigned to the *Scan Result Time* parameter determines how long the scan results of a successful scan are displayed on the screen. Time is measured in seconds, and a value of 0 (zero) disables the parameter. When you choose this option, a dialog box appears where you can enter a value.

NOTE To remove the scan result from the screen before the “Result Time” has expired, point the scanner away from the barcode and press the trigger.

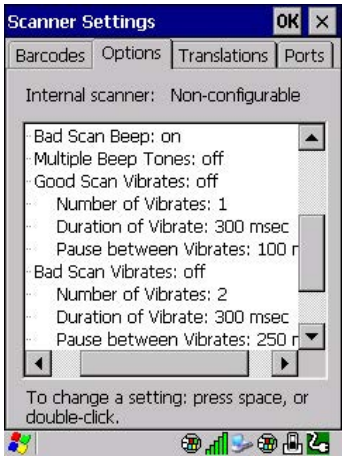
Good Scan Beep and Bad Scan Beep

These parameters determine whether or not the Omnii emits an audible scanner beep when a good (successful) scan or a bad (unsuccessful) scan is performed. Set these parameters to either **on** to enable the beeper or **off** to disable it.

Multiple Beep Tones

You can set the audible scanner beep to emit a series of three beeps instead of one. Set this parameter to **on** to enable the multiple beep tones.

Good Scan Vibrates and Bad Scan Vibrates



These parameters determine whether or not the Omnii creates a vibration when a good (successful) scan or a bad (unsuccessful) scan is performed. Set these parameters to **on** to enable the vibration. You can set the *Number* and *Duration* of vibrations, as well as the *Pause* between vibrations. The screen above shows the default settings.

Soft Scan Timeout

This parameter is used by the SDK “Scan” function (soft-scan: starting a scan session via the SDK function, instead of a physical user trigger press). The value assigned to this parameter determines the soft-scan timeout from *1* to *10 sec* (default is *3 sec*).

Scan Log File

If this parameter is enabled, the input barcode and the modified/translated output barcode are logged in the file *\Flash Disk\ScanLog.txt*. Keep in mind that if *Scan Log File* is enabled, there is a slight performance reduction when performing multiple scans since the log file is written to persistent storage.

Data Handling

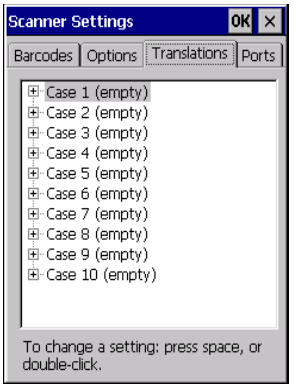
Codepage

If you are encountering a scan failure because there is an unrecognized language character in the barcode, the Codepage option may correct the problem by allowing the *ISO-8859-1 Latin 1* codepage to be used. The default value is *Default Local ASCII*.

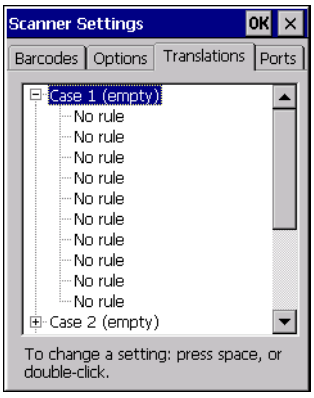
IMPORTANT Do not change this parameter from the default setting unless you are certain that it will correct your scan problem.

Translations

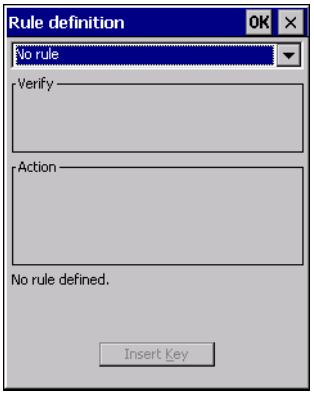
The *Translations* menu allows you to define up to 10 cases, each consisting of up to 10 rules in sequential order. Only one case will be applied to a barcode and a case will only be applied if all rules specified in the case are successful — if a rule within a case fails, the entire case fails.

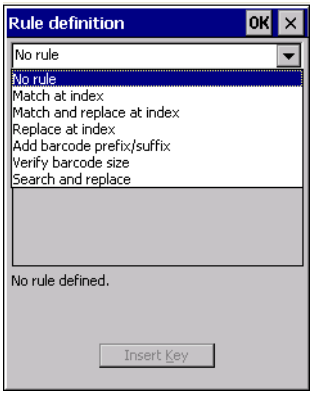


- In the *Translation* menu, tap on the **Case #** to create rules.

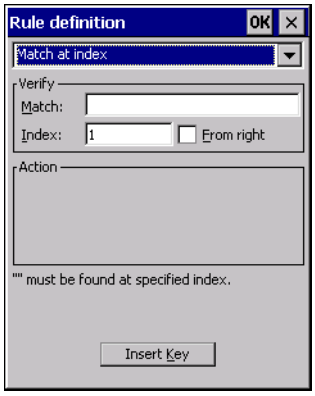


- Tap on the **No rule** drop-down menu to display the rules.





When you choose a rule, an associated screen is displayed in which you can define the rule.



Case Rules

The case rules are defined as follows:

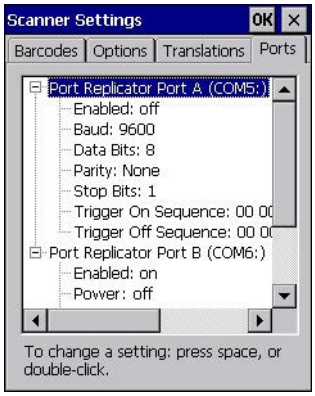
- ***No rule*** — ignored.
- ***Search and replace*** — replaces all instances of the match string. (Note that this rule cannot fail.)
- ***Match at index*** — matches the match string at a specified index.
- ***Match and replace at index*** — matches the match string at a specified index and replaces/changes it.
- ***Replace at index*** — replaces/changes unspecified data in a given range.
- ***Add barcode prefix/suffix*** — adds a global prefix or suffix.
- ***Verify barcode size*** — verifies the barcode size. This rule should generally be assigned first, before creating subsequent rules.

NOTE Keep in mind that the effects of previously applied rules must be taken into account when creating subsequent rules. For example, if the barcode size is important, it should be checked before any rules that might change the size are applied.

Translation information about the status of each case/rule is displayed in the scan log file (see “Scan Log File” on page 3-58) when enabled. This is useful if a case fails, and you are trying to determine why a rule is failing.

Ports

Figure 3-5 *Console and Port Replicator Port Settings*



While you cannot configure the scanner, you can configure communications with a serial decoded scanner using the options in this tab.

Use these settings to ensure that the communication ports on the Omnii match the settings of the serial devices to which they are connected. If the settings do not match exactly, the devices may not function. Note that some devices can auto-detect serial port settings (such as baud rate), and in this case the Omnii will dictate the settings. Baud rates often have a direct impact on performance — they should be set as high as possible while still ensuring reliable communication.

Port Replicator Port A (COM5) and Port B (COM6)

Port Replicator Port A (COM5) and Port B (COM6) are standard RS-232 DE-9 DTE ports on the Omnii port replicator module, available on some snap modules and cradle types.

Enabled

This parameter must be set to ON in order for the Omnii to recognize the device connected to the Port Replicator 9-pin (COM5).

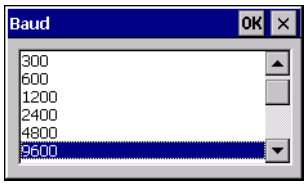
Power (COM6 only)

Pin 9 on the Omnii COM6 is reserved for 5V power out and is defaulted to OFF. This parameter must be set to ON to enable power to a Snap Module or Vehicle cradle.

Baud

Double-tapping on this parameter displays a pop-up window in which you can choose an appropriate rate of data transfer.

Figure 3-6 *Port Baud Rates*

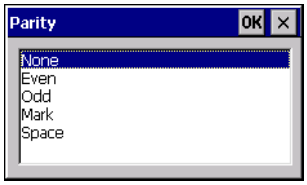


Data Bits

This parameter determines the number of data bits included in each asynchronous data byte. Most devices use 8-bit data bytes. Double-tapping on this option displays a pop-up window in which you can choose either 7 or 8 data bits.

Parity

This parameter determines the type of parity checking used on the data going through the port replicator port. Double-tapping on this option displays a pop-up window in which you can choose the appropriate parity.

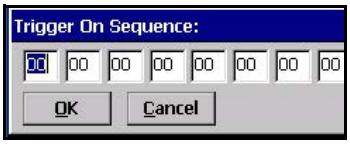


Stop Bits

This parameter specifies the number of stop bits — 1, 1.5 or 2 — used for asynchronous communication.

Trigger On Sequence And Trigger Off Sequence

If a SICK scanner connected to an Omnii port requires a serial stream of data bytes to trigger the scanner *on* and another to trigger the scanner *off*, the *Trigger On Sequence* and *Trigger Off Sequence* parameters allow you to define these serial streams.



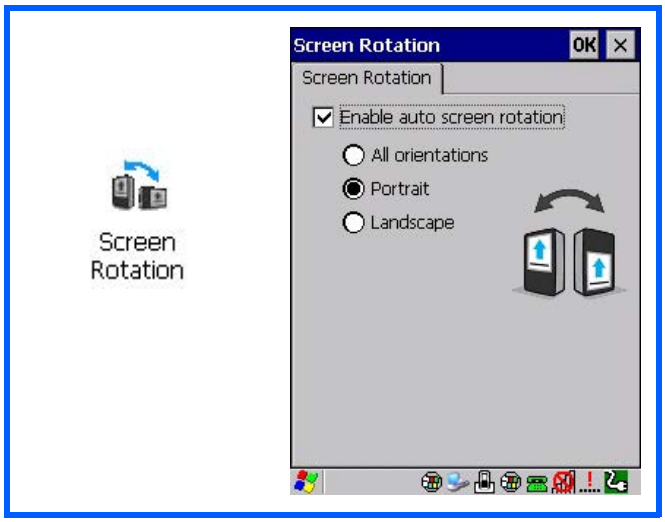
Double-tapping on *Trigger On Sequence* or *Trigger Off Sequence* displays a screen with a hex array of 10 elements.

These parameters work in conjunction with *Manage Triggers* sending on and off data streams to the trigger module you assigned. For example, suppose you launch *Manage Triggers* and choose *Decoded Scanner* as the *module to trigger*. Next, you assign a trigger key — for this example, . (period). To define the serial stream of data bytes to control the *on* and *off* function of the *trigger key*, enter a hex value in the *Trigger On Sequence* and the *Trigger Off Sequence* fields. When you press the trigger key, the *Trigger On Sequence* is sent and when you release the trigger key, the *Trigger Off Sequence* is sent, turning the trigger key *on* and *off*.

Screen Rotation

This option allows you to determine how your Omnii screen will behave depending on how the unit is oriented.

- Tap **Start>Settings>Control Panel**, and then tap on the **Screen Rotation** icon.



To Maintain Screen Orientation

Choose either the **Portrait** or **Landscape** radio button and uncheck the **Enable auto screen rotation** box. Your screen will appear in that mode without rotating when the Omnii is moved about.

To Enable Screen Rotation

Check the *Enable auto screen rotation* box and the orientation you want. Your screen will flip vertically (Portrait mode) or horizontally (Landscape mode) as you rotate the Omnii. If you choose **All orientations**, the screen rotates to portrait or landscape to match the orientation of the Omnii.

NOTE Your screen orientation option starts once you press ***OK*** and then exit Control Panel.

The Control Panel screen itself is always in upright Portrait mode.

Storage Manager

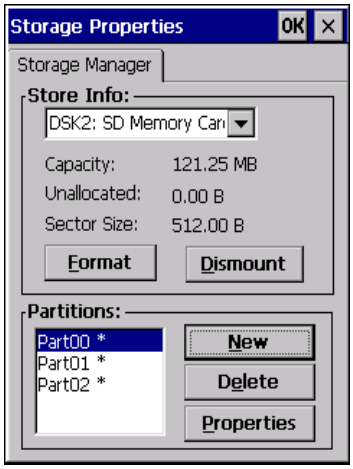
The Storage Manager allows you to view information about the storage devices that are present in the Omnii, such as SD-MMC flash cards and Compact Flash cards.

Formatting a Memory Card

Formatting a memory card bulk-erases it. Once a card is erased, partitions may be created in it, similarly to those on a hard drive. Memory-card devices are normally mounted (made available to the system) automatically when they are inserted. They must be dismounted before they can be formatted.

To format an entire memory card:

1. Select **Start> Settings>Control Panel**.
2. In Control Panel, double-click on the **Storage Manager** icon. The Storage Manager menu opens:



1. Select the memory card from the drop-down list.
2. Press the **Dismount** button to dismount the memory card. All partitions on the card will be dismounted.
3. Press the **Format** button to format the memory card.

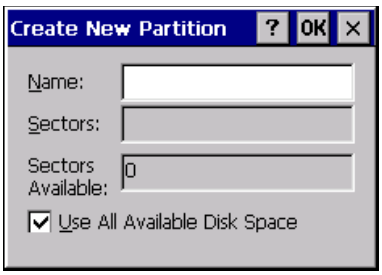
All partitions and information on the card will be erased during the formatting process.

Creating Partitions

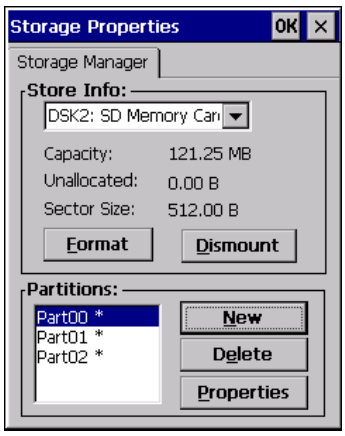
Once the card is formatted, new partitions can be created in it. The default is to create one partition that occupies the whole card, but a card can be divided into more than one partition if desired. Each partition appears as a separate folder in Windows Explorer.

To create new partitions:

1. Press the **New** button next to the *Partitions* list box. The Create New Partition dialog box appears:



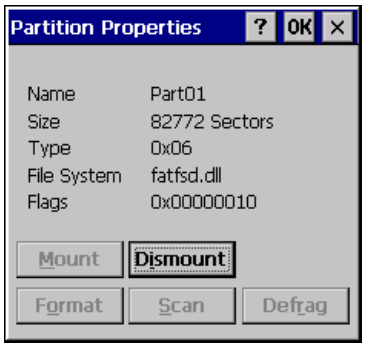
2. Type a name for the partition.
3. If more than one partition is desired, uncheck the *Use All Available Diskspace* check box, then specify the desired number of sectors to be used by the partition.
4. Press **OK**. The new partition appears in the *Partitions* list.



The new partition is automatically mounted. This is indicated by an asterisk (*) next to its name in the partition list. Any unallocated space on the card is indicated at the left, and additional partitions can be created in it.

Partition Management

Partitions can be individually dismounted, mounted, deleted, or formatted as well. These and additional tasks are available from the *Partition Properties* dialog:



To dismount a partition:

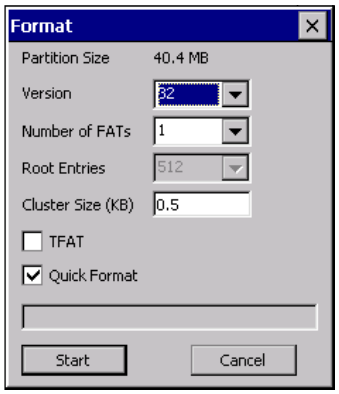
1. Choose the desired partition.
2. Tap the **Properties** button. The *Partition Properties* dialog appears.
3. Tap the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.

To delete a partition:

1. Select the desired partition.
2. Tap the **Delete** button. A warning dialog appears.
3. Tap the **OK** button. The partition is deleted.

To format a partition:

1. Choose the desired partition.
2. Tap the **Properties** button. The *Partition Properties* dialog appears.
3. Tap the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.
4. Tap the **Format** button. The *Format* dialog appears:



5. Choose your format options. These options include:
   - Version of file system (FAT-16, for devices holding up to 4 GB; or FAT-32, for devices containing up to 32 GB).
   - Number of FATs (File-Allocation Tables).
   - Number of entries allowed in the root directory.
   - Cluster size (.5 KB to 64 KB).

   There are also two check boxes, which govern:
   - Whether to use the transaction-safe FAT file system (TFAT). This file system keeps multiple copies of the file-allocation table, changing one while maintaining another as a backup.
   - Whether to perform a quick format. Quick formatting removes all reference to data in the partition without erasing the actual partition. The partition will be treated as empty, and new data will overwrite it.
6. Tap **Start**. The partition is formatted.

To mount a partition:

1. Choose the desired partition.
2. Tap the **Properties** button. The *Partition Properties* dialog appears.
3. Tap the **Mount** button. The partition is mounted. The asterisk appears next to its name in the partitions list.

The Partition Properties dialog has buttons for additional functions. Partitions can be defragmented, and their file structure can be scanned.

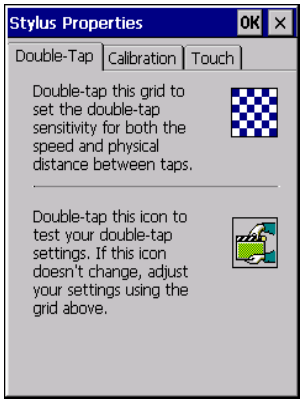
Stylus Properties

NOTE Touchscreen calibration may not be enabled on your unit. If your screen appears to require recalibration, contact your supervisor.

- In the *Control Panel*, choose the **Stylus** icon.

Double-Tap

- In the *Double-Tap* menu, follow the directions to tailor the sensitivity of the stylus when you tap on the touchscreen.


Stylus Properties
OK
Double-Tap
Calibration
Touch
Double-tap this grid to set the double-tap sensitivity for both the speed and physical distance between taps.
Double-tap this icon to test your double-tap settings. If this icon doesn't change, adjust your settings using the grid above.

Calibration

Touchscreens rarely require recalibration. However, if your touchscreen has never been calibrated or if you find that the stylus pointer is not accurate when you tap on an item, follow the directions below.

- Choose the **Calibration** tab, and then tap on the **Recalibrate** button.

- Follow the directions in the *Calibration* tab to recalibrate the screen You will be prompted to save the calibration data.

NOTE If you do not receive a prompt to save your data, there could be a problem with your touchscreen hardware. Contact your Motorola representative.

Touch

This tab allows you to disable the touchscreen.

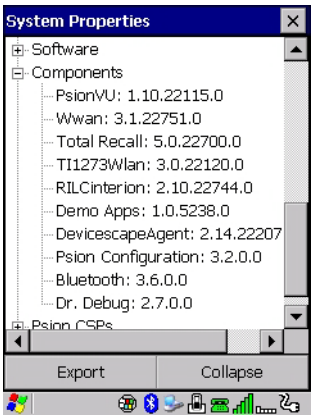
- Choose the **Touch** tab. Select the check box next to *Disable the touch panel*.

System Properties

This program identifies the computer software and hardware components, indicating which components are installed, their identification, version or part numbers, and whether they are enabled or disabled.

- In *Control Panel*, choose the **System Properties** icon.

- By choosing the *Export* button, you can create a log (*SystemProperties.xml*) of your current components, which will be placed in the *My Device* folder in Windows Explorer.



- Instead of expanding each section of items individually, you can also choose to open all the lists at once by choosing the *Expand* button, which will then change to a *Collapse* button to enable you to collapse all the sections as well.

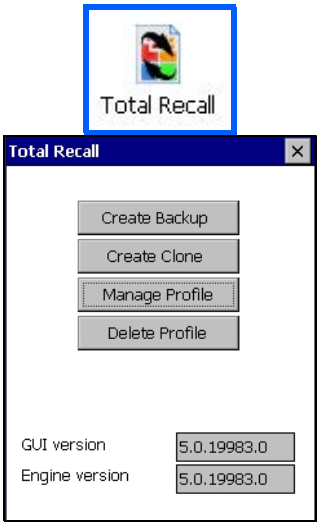
Total Recall

Total Recall is a Motorola utility developed to maintain applications and settings during a cold boot, as well as clone settings to other devices. This utility creates a restore point of a device at a known state. This can be used as a backup of the device (the administrator can clean the terminal and restore the profile at any time), or a clone (the administrator can store different configurations for different uses to clone to other hand-held computers).

NOTE Total Recall works differently (e.g. restore on cold boot or on clean boot) on different OS platforms and versions (e.g. Windows CE 5.0, 6.0, Windows Mobile, Windows Embedded Hand-held). For detailed information and other updates on Total Recall information, please go to the IngenuityWorking website at:

http://community.psion.com/knowledge/w/knowledgebase/total-recall.aspx

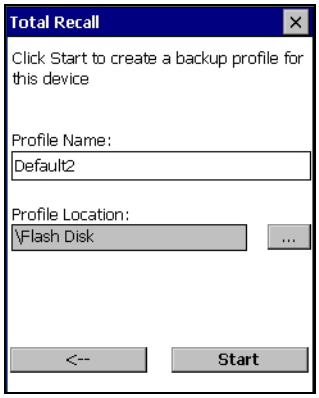
- In the *Control Panel*, choose the **Total Recall** icon.



In the start up screen, you can choose from four options: *Create Backup*, *Create Clone*, *Manage Profile,* and *Delete Profile*.

Creating a Backup

- Tap on the **Create Backup** button to begin the process.



This dialog box displays the Profile Name and the storage destination for the profile file.

- In the *Profile Name* field, type a name for a profile.

- If you want to choose another location for your backup file (optional), tap on the **[...]** button to the right of the *Profile Location* field and choose one of a number of folders.

IMPORTANT Any profile not stored in persistent memory (Flash Disk, external USB drive) will be erased during a clean boot, therefore you should store profiles on a persistent drive.

When performing an autorestore, the program only searches for the profile located in the \Flash Disk\TotalRecall folder. If you store your profile anywhere else it will not be restored. Only one profile can reside in that folder.

- Tap on **Start**. A backup of the current settings will be created and saved to the specified location. The unit will then reboot.

To view profiles and choose restore options, refer to “Managing Profiles” on page 3-70.

Creating a Clone

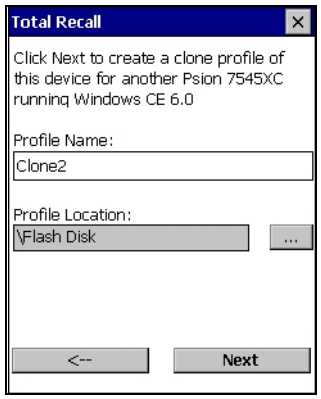
Cloning allows you to copy settings or configurations from one computer to another. There are two types of clones to choose from: a *Full Clone* and a *Settings Only Clone*.

A *Full Clone* contains all files, most of the registry, and the settings files.

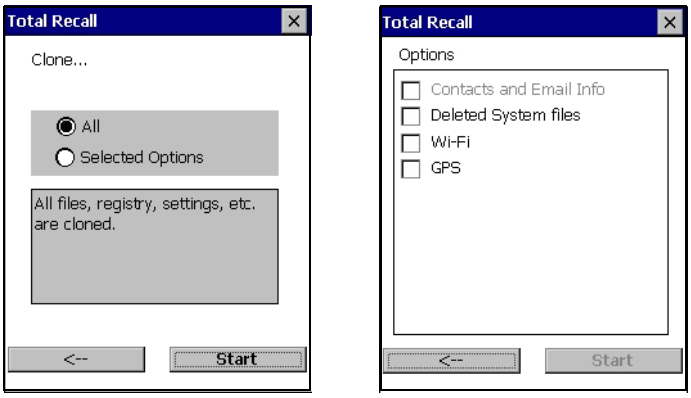
IMPORTANT The target device for a Full Clone MUST have the same model type and OS build as the source, otherwise problems can occur. For example, if the target device has a newer build of the OS, the new build may have a different set of registry keys that may conflict with the source.

A *Settings Only Clone* can be copied to a wider array of devices, but it should not be used as an autorestore profile.

- Tap on the **Create Clone** button to begin the process. Your Omnii model type and OS will be identified in the cloning statement to ensure that you target devices of the same type. Give the clone profile a name and location, then tap on **Next**.



- In this menu, select **All** for a *Full Clone*, or **Selected Options** for a *Settings Only Clone*. If you choose *Selected Options*, a menu will open to enable you to decide which options you want cloned.



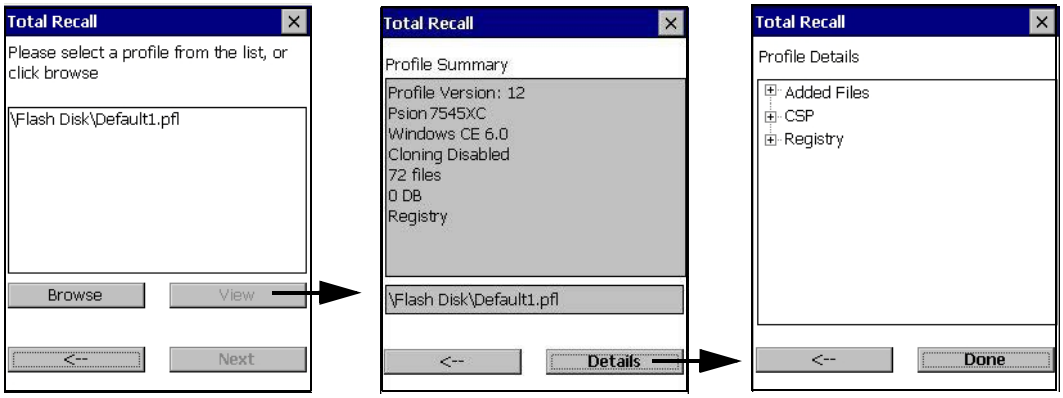
Managing Profiles

You can view profiles and choose profile options from the menus in this section.

Viewing a Profile

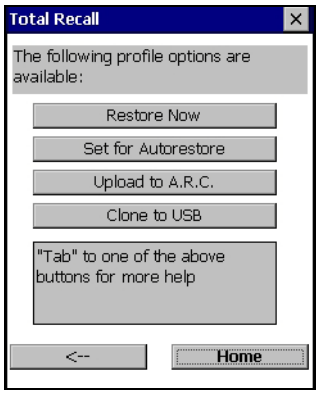
- Tap on the **Manage Profile** button to see your list of profiles. Highlight a profile, and then you can choose to **View** the Profile Summary and go on to the next menu, Profile Details.

List of profiles Profile Summary Profile Details



Profile Options

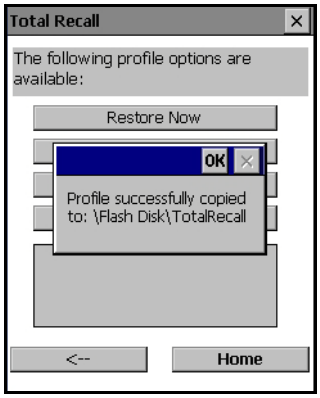
- Tap on the **Manage Profile** button to see your list of profiles, as shown above. Highlight a profile, and tap on the **Next** button to choose from options to restore or clone the profile. You can choose from four profile options: *Restore Now*, *Set for Autorestore*, *Upload to A.R.C.*, and *Clone to USB*.



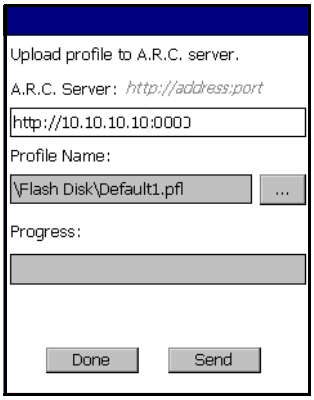
- Next, tap on the option button you want to use:
- ***Restore Now*** – restores the profile immediately. If you are restoring a profile that is a backup or Full Clone, the computer will clean reset first; if the profile is a Settings Only Clone, it will not.
- ***Set for AutoRestore*** – creates a profile that is automatically restored following a cold reset or a clean start. The profile is stored in the *\Flash Disk\TotalRecall* folder.

IMPORTANT After setting an autorestore profile, that profile will overwrite any other profile already placed in the \Flash Disk\TotalRecall folder.

In an autorestore, Total Recall only restores the profile located in the \Flash Disk\TotalRecall folder. If you store your profile anywhere else it will not be restored.

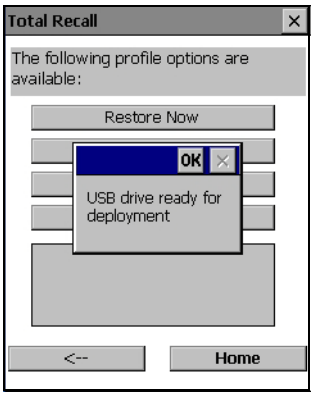


- ***Upload to A.R.C*** – uploads the profile to the Active Remote Configuration server. After you tap on **Send**, a message will come up either confirming that the upload was complete or that the connection to the server failed.

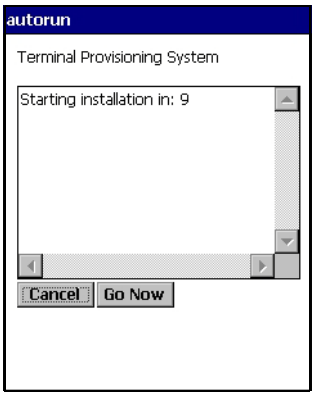


- ***Clone to USB*** – writes a clone of the profile to the USB drive. After you tap on the button, a message will come up either confirming that the USB drive is ready for deployment, or that it is not available.
- When you are ready to install the profile on another unit, turn on the next computer to be cloned and insert the USB key. The profile will be automatically installed to the computer *\Flash Disk\TotalRecall* folder. There is a short delay in deployment so that you can cancel the process if needed.

USB drive prepared for cloning

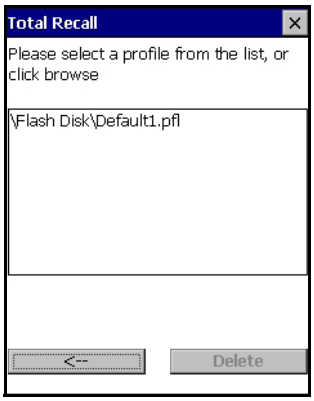


Autorun installation on next Omnii



Deleting a Profile

- In the *Total Recall* home screen, tap on **Delete Profile**.
- In the next screen, locate your backup file, and tap on **OK**.



A warning pop-up screen appears asking if you're certain that you want to delete this file.

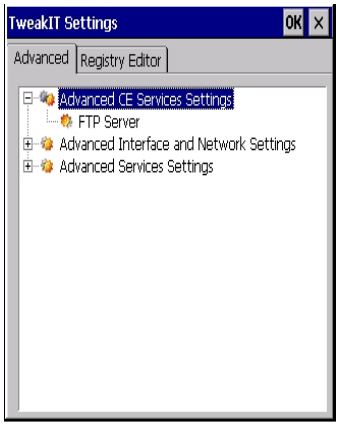
- Tap on **Yes** to delete the file.

TweakIt

This utility allows you to *tweak* or adjust *Advanced* system settings (interface, network, servers, driver, and radio) and provides a *Registry Editor*.

Advanced

Advanced CE Services Settings

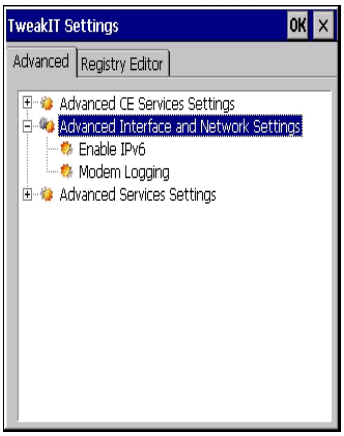


FTP Server

This option is enabled by default to allow file transfers. Keep in mind that data transfer in either direction is restricted to the Temp folder — that is, data are always loaded from the *FTP Server* to the *Temp* folder and from the *Temp* folder to the *FTP Server*.

If this option is disabled, a warm reset must be performed to accept the change.

Advanced Interface and Network Settings



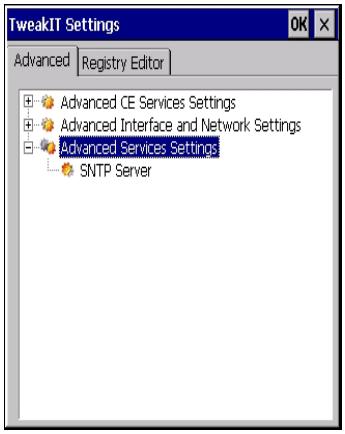
Enable IPv6

This option allows you to enabled Internet Protocol specification, version 6, that has been published to enable 128-bit IP addresses (replacing version 4).

Modem Logging

When this option is enabled, the Omnii logs AT commands (e.g., dial-out information, password string, etc.) that the administrator can monitor for debugging purposes. Modem commands are stored in: \MdmLog.txt.

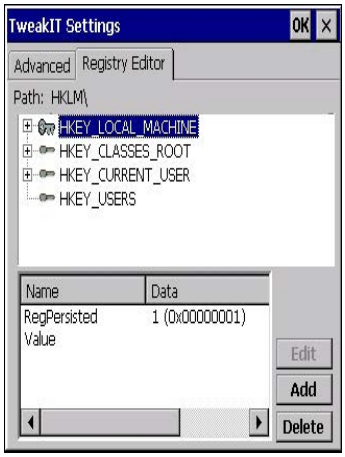
Advanced Services Settings



SNTP (Simple Network Time Protocol) Server

The *SNTP Server Name* typed in this dialog box is used to synchronize Omnii time with the server time. A warm reset must be performed once the server name as been entered.

Registry Editor



This option is reserved for senior administrators who have a strong understanding of registry keys and values.

WARNING **Careless registry editing can cause irreversible damage to the Omnii.**

Voice – Using the WWAN Phone Dialer

If the WWAN modem is installed and enabled, the *Phone icon* and the *GSM signal strength icon* will appear automatically on the taskbar.

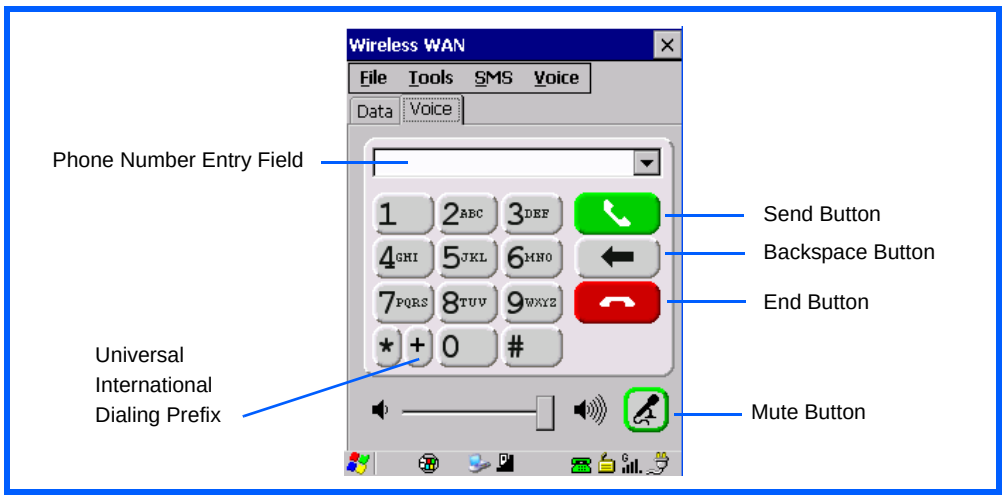
- Double click on the **Phone icon** to access the phone dialer.

NOTE On 55- and 66-key Omnii keyboards, you can also press the [Talk] key to display the phone keypad providing it has been activated. The [Talk] key is labelled with a green telephone receiver icon. Refer to "Sending and Ending Calls Using the Omnii Keyboard" on page 3-75 for details.

You can also follow the steps below to access the phone dialer:

- To access the dialer, tap on **Start>Settings>Control Panel**.
- Tap on the **Wireless WAN icon**, and then tap on the **Voice** tab.

The *Voice* tab displays a phone dialer used to dial phone numbers. The *Voice* menu provides commands which allow you to manage your phone contacts, view your phone history, and so on.



Dialing a Number

To make a phone call:

- Type the recipient's phone number in the phone number entry field.
  - ***Send button*** – tap to dial the number you typed.
  - ***Backspace button*** – tap to erase characters in the phone number entry field.
  - ***End button*** – tap to disconnect the phone call.
  - ***Mute button*** – During a phone call, tap to mute sound transmission. Tap again to restore sound.
  - ***+ button*** – When making an international call, the + sign can be used as a universal substitute for any international dialing prefix and is guaranteed to work worldwide. The entry sequence must be as follows: ***+ country code*** followed by ***phone number.***

  Example: A standard phone number: 011 36 30 275 28466 using the + substitution is typed as follows: +36 30 275 28466

  The + symbol replaces the universal dialing prefix 011.

Sending and Ending Calls Using the Omnii Keyboard

The 55-key and the 66-key Omnii keyboards come equipped with phone keys — each has a [Talk] and an [End] key on the physical keyboard.

- Press the **[Talk]** key to answer a call or to display the onscreen phone keypad so you can initiate a call.
- Press the **[End]** key to terminate a phone call.

Receiving an Incoming Call

To answer an incoming call:

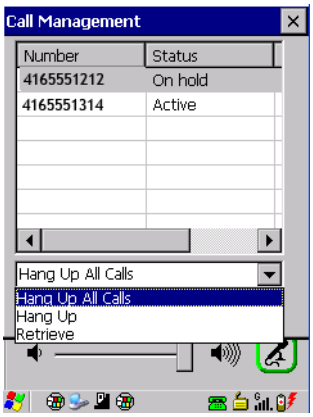
- Tap on the **[Talk]** button; it's labelled with a *green* phone receiver.

Voice Menu

This menu allows you to manage calls, view your call history, and if required, assign a call forwarding service to your hand-held.

Call Management

The *Call Management* option only becomes available in the *Voice* menu when at least one phone call is either *On hold* or *Active*. When you choose this command, the currently active phone call is listed in a dialog box.



Using the drop-down menu, you can choose to:

Hang Up All Calls - This option only appears when more than one call is listed.

Hang Up - This option disconnects only the call you've highlighted in the list.

Hold - This option places the call you've highlighted on hold.

Retrieve - This option is only available when a call is on hold, and choosing it retrieves the call you have highlighted from hold.

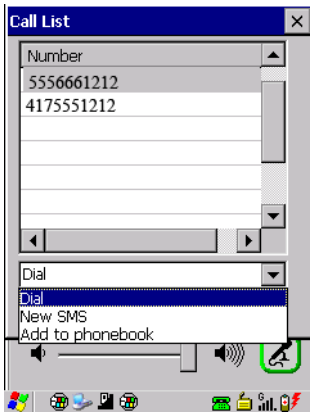
- In the *Call Management* list, highlight the phone number to which you'd like to apply a command.
- Choose a command from the drop-down menu, and tap on **Execute** to carry out the command on the highlighted phone number.

If you have two active calls on your hand-held, one *On Hold* and one *Active*, you can set up a conference call between yourself and the other callers. To set up a conference call:

- Highlight the phone number that is currently *On Hold*, and choose **Retrieve**. Tap on **Execute**.

Both calls will be listed as *Active* in the *Call Management* list. All calls are now conferenced so that you as well as your callers can speak to one another.

Call Lists



The *Call List* command manages your call history, listing calls you've *Dialed*, *Received* and *Missed*. When you choose one of these commands, a dialog box lists the phone numbers.

A drop-down menu provides a list of commands you can execute on a phone number in the *Call List*. You can choose to:

- Dial the number,
- Send a New SMS, or
- Add to phonebook to add the highlighted phone number to your phonebook. (Refer to "Phonebook" on page 3-78 for details additional details about the Phonebook.)

In the *Call List*:

- Highlight the **phone number** with which you want to work.
- Choose a command in the drop-down menu.
- Tap on the **Execute** button to carry out the command.

Services

The *Service* menu offers several options for your hand-held to customize the behaviour of your phone. You can, for example, bar incoming calls, tailor to whom your caller ID will be transmitted, set up call forwarding, enable the hearing aid service, and so on. If you choose an option, it may take a number of seconds for your unit to read the network settings.

NOTE Keep in mind that some services may not be supported by your network, or they may not have been subscribed to.

- Tap on the **service** you want to enable.

The *service* dialog boxes allow you to tailor your available services to meet your requirements.

Voicemail Access

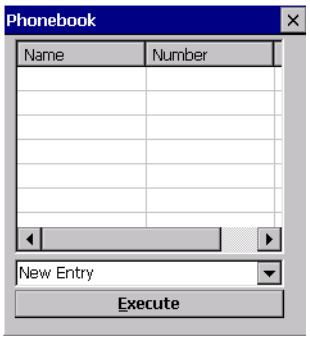
If your service includes *Voicemail*, choosing this option for the first time displays a screen in which you can enter your voice mail provider phone number.

File Menu – Phonebook Management

Tapping on the *File* menu provides access to your *Phonebook*.

Phonebook

The *Phonebook* allows you to store frequently used phone numbers. When no numbers have been added to your phonebook, the only command available to you is *New Entry*.



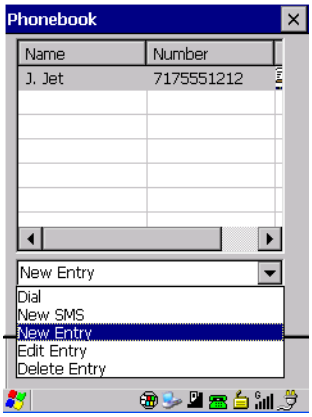
To add a new phone number to your phonebook:

- Choose *New Entry* in the drop-down menu, and tap on **Execute**.

- Type the name corresponding to the phone number you want to add.
- Press **Tab** and type the phone number you want to store.
- Tap in the check box next to *Store in SIM* to save the phone number there, or leave this check box blank if you prefer not to store the number on the SIM card.
- Tap on the **Execute** button to save the phone number in your *Phonebook*.

Phonebook entries are saved even after you exit Wireless WAN.

Once you've added a phone number to the *Phonebook*, a list of new commands is available in the drop-down menu.



You can choose one of the following:

- ***New Entry*** to add another phone number,
- ***New SMS (Short Message Service)*** to send a new SMS,
- ***Edit Entry*** to change an existing name and/or phone number, *or*
- ***Delete Entry*** to erase an existing phone entry.

In the *Phonebook*:

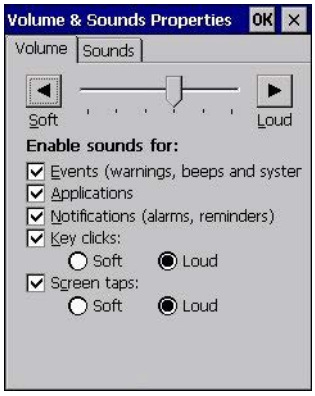
- Highlight the entry with which you want to work.
- Choose a command from the drop-down menu, and tap on **Execute** to carry out the command.

Volume & Sounds Properties

The Omnii supports several audio options, including *Bluetooth*. The beeper is used for the standard sounds: key clicks, screen taps, and scanning. The optional rear speaker can be used for system (Windows) sounds and *.wav* files. When a rear speaker is absent, those sounds are routed to the front receiver.

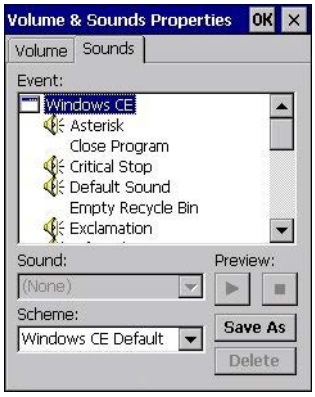
- In the *Control Panel*, choose the **Volume & Sounds** icon.

Volume Adjustments



- Slide the volume button to the left to lower the volume or to the right to increase the volume.
- Under the heading *Enable sounds for*, enable the conditions under which you want the hand-held to emit a sound.

Sound Adjustments



This dialog box allows you to assign sounds to identify particular actions. For example, you can choose the sound your hand-held will emit when you close a program and choose another sound for a failed scan, etc.

Wi-Fi Config

The *Wi-Fi Config* application is used to configure the Omnii 802.11a/b/g/n radio for one or more wireless network profiles. A network profile contains settings for SSID (Service Set Identifier) and security options.

NOTE In most situations, the configuration of your 802.11 radio will require parameter setting and access keys from a network administrator.

To launch the *Wi-Fi Config* application:

- Tap on **Start>Programs>Wi-Fi Config**.

The *Wi-Fi Config* screen is displayed.

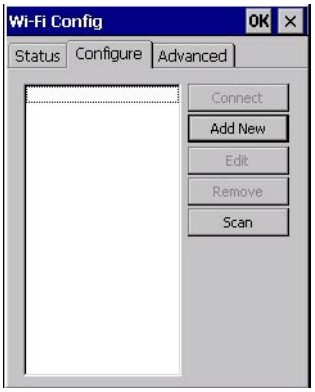
Wi-Fi Config: Status

The *Status* tab displays information about the wireless network to which the Omnii is configured to connect. When there are no network profiles configured, this tab is not populated.

Disable/Enable Radio: This button toggles between *Disable Radio* and *Enable Radio* depending on whether the radio is turned off or on.

Wi-Fi Config: Configure

- To configure the radio for a wireless network, tap on the **Configure** tab.



Connect: Used to connect to an already existing wireless network configuration.

Add New: Used to create a new wireless network configuration.

Edit: Used to change values in an already existing wireless network configuration.

Remove: Used to delete a wireless network configuration.

Scan: Used to detect and list available wireless networks. You can highlight a network in the list, and tap on *Add New* to activate the network.

There are two methods available when configuring a radio network — you can either scan for an existing network or manually create a network. If you tap on the **Scan** button, a list of networks detected by the radio is displayed. Highlighting one of the listed networks and tapping on the *Add New* button creates a new profile that is completed based on the security capabilities detected by the radio. You may need to add additional information, depending on your network requirements.

Manually Creating a Network

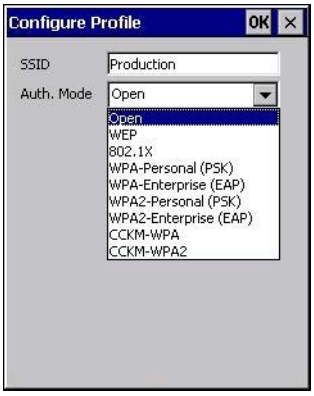
If you tap on the **Add New** button rather than the *Scan* button, you can create a network manually.

IMPORTANT The steps below describe how to manually create a network. Keep in mind that this is intended only as an example and may vary from your own network requirements. If, for example, you are using a different type of security for your network, the fields you complete may not match those described here.

- Enter the **SSID** (Service Set Identifier) for your network.

Authentication Mode

The Omnii supports several classes of authentication — *Open*, *WEP*, *WPA/WPA2 (Personal PSK, Enterprise, CCKM-WPA, CCKM-WPA2)*, and *802.1x with EAP*. Tapping on the *Auth. Mode* menu displays your authentication options.



NOTE Each Auth. Mode has a unique *Configure Profile* screen attached to it with fields appropriate to the authorization mode you've chosen.

Open Authentication

Open authentication does not provide security. When this option is chosen, the Omnii will connect to wireless networks which do not use authentication or encryption.

WEP (Wired Equivalent Privacy)

WEP provides static security to prevent others from accidentally accessing your network. If you choose this option, you can specify the type of WEP authentication — *Open* or *Shared*, the WEP security key length — *64 bit* or *128 bit* and the key type — *ASCII* or *Hex*. WEP *Key* fields are also provided where you can specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimal digit sequence that matches the active WEP key on the access point.

WPA & WPA2 Personal PSK (Pre-Shared Key)

When PSK is selected, either *WPA Personal PSK* or *WPA2 Personal PSK* — a shared key must be configured on both the access point and the hand-held computer. One of the following can be chosen from the *Encryption* drop-down menu: *TKIP*, *AES* or *TKIP+AES*.

802.1X, WPA & WPA2 Enterprise, CCKM-WPA & CCKM-WPA2

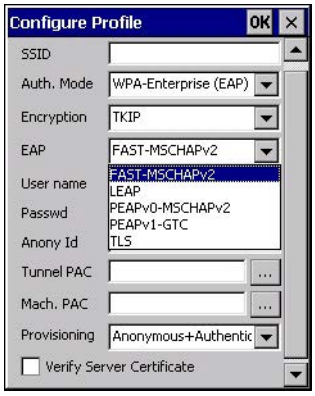
These authentication modes use *802.1X* with *EAP* authentication. When *802.1X* is selected, the Omnii uses *WEP* encryption with automatic (as opposed to static) keying. For the others, the user may choose *TKIP*, *AES* or *TKIP+AES* encryption.

Encryption

The *Encryption* menu allows you to choose the type of encryption that will be used to protect transmitted data. Choose an *Encryption* method valid for your network from the drop-down menu. Only the *Encryption* options that are compatible with the type of *Auth. Mode* you've chosen will be listed. In fact, in some cases, this menu will not be available at all.

EAP

This menu allows you to choose the *EAP* (Extensible Authentication Protocol) type used for 802.1x authentication to an access point.



The following EAP types are supported by *Wi-Fi Config*:

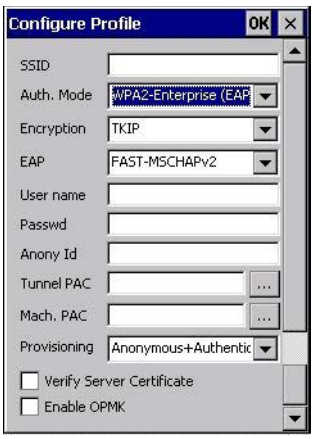
- **TLS:** Provides strong security via the use of client certificates for user authentication.
- **PEAPv0-MSCHAPv2:** Provides secure user authentication by using a TLS tunnel to encrypt EAP traffic. *MSCHAPv2* is used as the inner authentication method. This is appropriate for use against Windows Active Directory and domains.
- **PEAPv1-GTC:** PEAP authentication using GTC as the inner method which utilizes one time passwords (OTPs) for authentication against OTP data bases such as SecureID.
- **LEAP:** Is an authentication method for use with Cisco WLAN access points. LEAP does not require the use of server or client certificates. LEAP supports Windows Active Directory and domains but requires the use of strong passwords to avoid vulnerability to off-line dictionary attacks.
- **FAST-MSCHAPv2:** Is a successor to LEAP and does not require strong passwords to protect against off-line dictionary attacks. Like LEAP, EAP-FAST does not require the use of server or client certificates and supports Windows Active Directory and domains.
- Complete the fields in the **Configure Profile** screen. If you're uncertain about some of the options, your system administrator will be able to provide the correct information for your wireless network.
- Once you've completed the necessary fields, tap on **OK**.

Verify Server Certificate

When the *Verify Server Certificate* box is checked, the Omnii will verify the certificate provided by the authentication server during the authentication process. This requires that an appropriate certificate be manually installed on the Omnii for the verification.

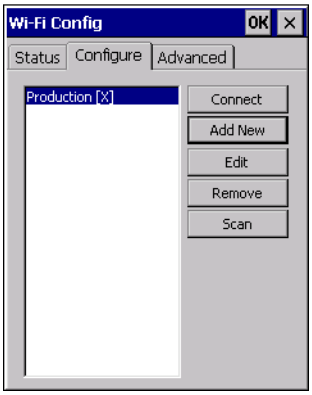
Enable OPMK

When used with compatible wireless infrastructure, Opportunistic Key Caching (OPMK) reduces the number of full authentications required when roaming. Only available with WPA2-Enterprise (EAP) authentication mode.



Connecting the Wireless Network

Your configured network is listed in the *Configure* tab. An *[X]* next to a network indicates that this is the network to which the Omnii will connect.



- Tap on the **Connect** button to activate your network.

The *Status* tab is displayed. The *Status field* displays *ASSOCIATING* while the 802.11a/b/g/n radio attempts to connect to the network. Once the association is complete, the *Status* tab is populated with the appropriate information about your network.

Configuring TCP/IP

If your network is not using a DHCP server, you will need to assign an IP address.

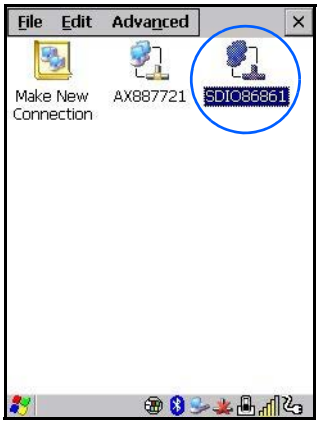
IP Address

To assign an *IP address* for your Omnii:

- Tap on the **radio icon** in the taskbar,

or

Tap on **Start>Settings>Network and Dial-up Connections**. Tap on the **radio icon** for which you want to assign an IP address — in the sample screen below, the icon is labelled *SDIO86861*.



The *Wireless Statistics* screen is displayed.

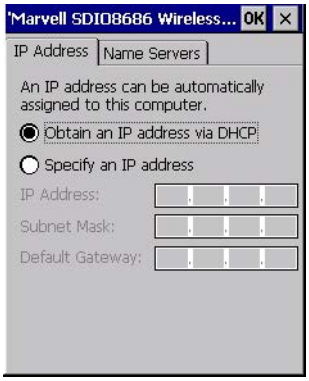
- Tap on the **IP Information** tab.

Figure 3-7 *SDIO86861 IP Information*

NOTE When DHCP is enabled, tapping the *Renew* button forces the Omnii to renew or find a new IP address. This is useful if, for example, you are out of communication range for a longer period of time and your hand-held is dropped from the network.

To define a static IP address:

- Tap on the **Configure** button.

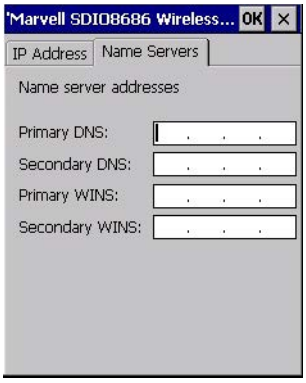


- Tap on the radio button next to **Specify an IP address** to select it.
- Type an **IP, Subnet Mask** and **Default Gateway** address in the appropriate fields. Press **[Enter]** to save your information.

Name Server

NOTE If DHCP is enabled, name server addresses are assigned automatically.

- In the *SDIO86861 IP Information* tab (see *Figure 3-7 SDIO86861 IP Information on page 3-87*), tap on the **Configure** button.
- Tap on the **Name Servers** tab.



The DNS and WINS fields in the *Name Servers* tab allow you to specify additional WINS and DNS resolvers. The format for these fields is ###.###.###.###.

Wi-Fi Config: Advanced

Country Options

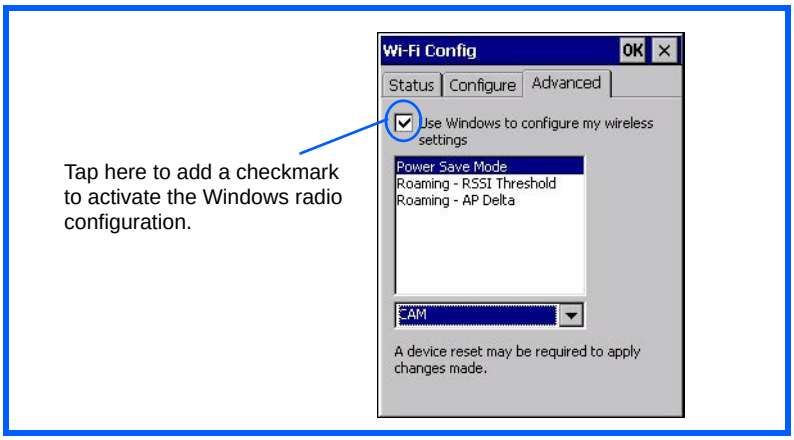
IMPORTANT *802.11d* is enabled by default for auto-country detection. If you are having difficulty associating with your access point, you may need to disable 802.11d and choose your country.

In the *Wi-Fi Config>Advanced* tab, choose **Country Option**. In the drop-down menu, choose your **country**.

Use Windows to configure my wireless settings

In the *Advanced* tab you can set Windows to configure the radio, using *Wireless Zero Config*.

- Tap on the check box to the left of **Use Windows to configure my wireless settings** to enable this option.



Power Save Mode

This allows you to set the 802.11 power saving mode of the radio to: *CAM* (continuous access — always on) (recommended); or *MAX_PSP* (maximum power saving mode).

Roaming - RSSI Threshold

This sets the RSSI threshold value, below which the radio will start scanning for new access points when roaming. Values range from *-55 to -90 dBm*.

Roaming - AP Delta

This sets how much greater (in dBm) the RSSI of a new access point must be than the RSSI of the currently associated access point in order for the hand-held to initiate a roam. Values range from *5 to 30 dBm*.

Concluding the Wi-Fi Configuration

If you've made changes in the Advanced menus, you will need to warm reset your Omnii.

- Choose **Start>Shutdown>Warm Reset**.
- A dialog box is displayed letting you know that you will lose all unsaved data. Tap on **OK**.

Once the reset is complete, if you checked the box next to **Use Windows to configure my wireless settings,** the *Wireless Zero Config* screen is displayed on the hand-held. Refer to Appendix H: "Wireless Zero Config Settings" for details.

Monitoring the Network Connection

The radio signal icon in the taskbar indicates the strength of the communication link with an 802.11 access point.

To access the radio signal icon:

- Tap on the radio icon in the taskbar to display the wireless statistics dialog box.

To access the radio signal icon using the keyboard:

- Press the [Windows] key to display the *Start Menu*.
- Highlight **Shortcuts** and then choose **System Tray** from the sub-menu.
- Use the [LEFT] and [RIGHT] arrow keys to highlight the **radio signal** icon in the taskbar.
- Press [Enter] to display the *Wireless Statistics* dialog box.

NOTE Moving in and out of the radio coverage area can have varying effects on a network session. At times, you may need to renew your connection by logging in again.

WiFi Connect A.R.C.

The WiFiConnectARC utility on the desktop provides a quick method to configure a device for use on a private network, primarily for use with Active Remote Configuration (A.R.C.).

When you click on this icon, WiFiConnect A.R.C. configures the default WiFi interface. The WEP key is set to **PsionPsion123**. The SSID is set to **Psion**. The default interface becomes the active interface. Keep in mind that you must configure the access point and the hand-held(s) to use the same settings.

Refer to the *Active Remote Configuration (A.R.C.) Administrators Guide*, PN 8000252, for details about updating devices on your network. This manual is available at:

http://community.psion.com/knowledge/w/knowledgebase/1189.a-r-c-active-remote-configuration.aspx

CHAPTER 4 ACCESSORIES

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Pistol Grips

There are a number of pistol grips available to you depending on the type of back cover and scanner/imager installed in your hand-held. Refer to the table below for a list of pistol grip model numbers and the types of back covers and scanners/imagers with which they are compatible.

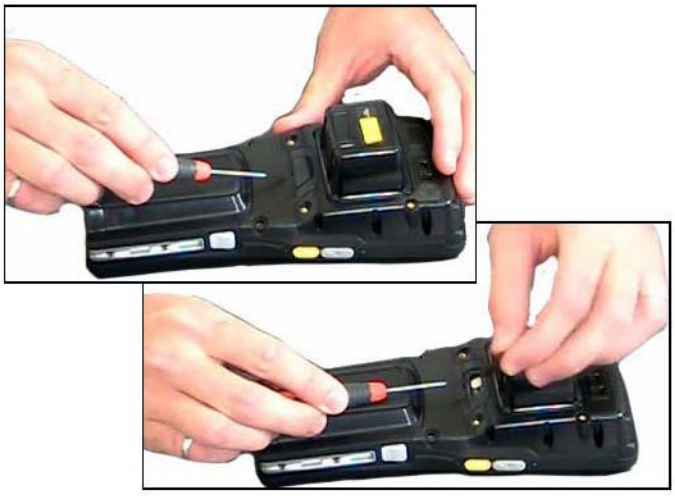
Pistol Grip Description	Model Number
Pistol Grip Standard Pod Kit	ST6000
Pistol Grip Standard Back A Kit	ST6100
Pistol Grip Standard Back B Kit	ST6400
Pistol Grip Freezer Standard Back Kit	ST6500

Removing the Trigger Cover

Before installing the pistol grip, you need to remove the trigger cover.

Using a flathead screwdriver, gently and carefully pry the trigger cover off the hand-held.

Figure 4-1 *Removing the Trigger Cover*



Attaching the Pistol Grip

NOTE Prior to installation, make sure the trigger mechanism is securely snapped into the pistol grip body and that the trigger operates properly.

The pistol grip is attached to the back of the Omnii using the four threaded inserts in the upper part of the Omnii casing (see Figure 4-2 Attaching the Pistol Grip on page 4-4). Four M3x6 Phillips head screws are provided.

- Position the pistol grip so that it fits snugly over the back of the unit and the holes in the pistol grip are aligned with the threaded inserts on the back of the hand-held.
- Using a Phillips screwdriver, tighten the screws to a torque of 3 lbs-in (3kgf-cm) to secure the pistol grip in place.

Figure 4-2 *Attaching the Pistol Grip*

Carrying and Protective Accessories

NOTE The Omnii Hand-Held Computer is a body worn device, and to maintain compliance with the FCC RF exposure guidelines, use a Motorola approved carrying case. Use of non-approved accessories may violate FCC RF exposure guidelines.

There are several Omnii carrying and protective accessories to help you work safely and comfortably.

Attaching Carrying Accessories

If your Omnii is not fitted with a hand strap, you can install it using the carrying accessory kit supplied. You'll need:

- A Phillips head screwdriver.

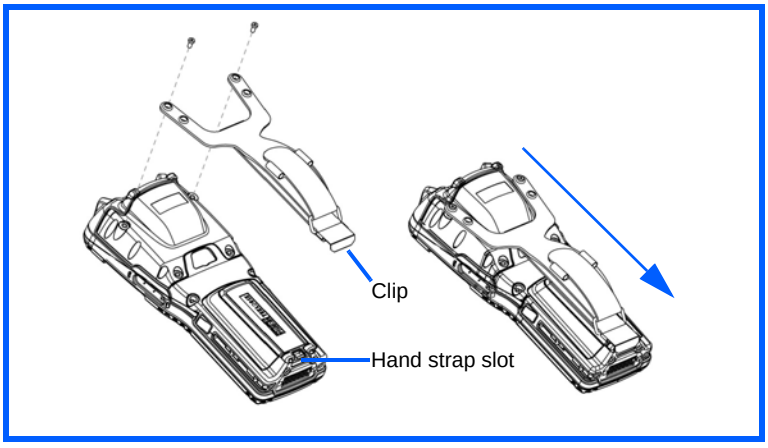
IMPORTANT Do not use adhesives such as Loctite to secure screws on carrying accessories. These chemicals may damage the plastic casing.

Accessory	Model Number
Wrist Strap	ST6040
Hand Strap	ST6025
Soft Shell Holster	ST6050
Hard Shell Holster	ST6055
Forklift Holster	ST6051
Carrying Case	ST6090
Pouch	ST6091
Screen Protector	RV6105
Rubber Boot:	
Yellow – Standard back covers A & B	ST6080
Grey – Standard back covers A & B	ST6081
Yellow – Expansion Back Covers	ST6082
Grey – Expansion Back Covers	ST6083
Yellow – Expansion Back Covers, WWAN End-cap	ST6084
Grey – Expansion Back Covers, WWAN End-cap	ST6085
Blue – Freezer Standard Back Covers	ST6086

The Hand Strap - Model ST6025

- Attach the strap to the two threaded inserts located at the back of the hand-held near the top of the unit (see Figure 4-3 Attaching the hand strap on page 4-5), using the two Phillips head screws provided with this accessory.
- Stretch the hands trap toward the base of the hand-held, and hook the clip at the bottom of the hand strap into the slot near the base of the battery pack.

Figure 4-3 *Attaching the hand strap*



Protective Carrying Case - Model ST6090

A carrying case is available for the Omnii to shield the unit from damage. It is compatible with the hand strap. A variety of cases are available, depending on the type of end-cap attached to your unit.

Hard Shell Holster - Model ST6055

A hard shell holster that includes a belt, leg tie-down, and tether, can be used to hang the Omnii with a pistol grip from your waist, on either your left or right side.

- Feed the belt through the top panel of the holster, and adjust the belt as needed.
- If using the leg tie-down strap, wrap it around your leg and snap the buckle closed. Adjust the tightness of the strap for security and comfort.
- Place the Omnii into the holster with the grip extending back through the custom opening.
- If desired, attach the tether to the pistol grip.

Figure 4-4 *Hard Shell Holster (pistol grip tether not shown)*

Power Accessories

The following accessories can be ordered for your Omnii:

Description	Model Number
AC Wall Adaptor	ST1050 or ST1050-AR
Vehicle Power Outlet Adaptor	ST3113
Snap Module – Charger Only	ST4000
Snap Module – USB Host/Client plus Charger	ST4001
Snap Module – DE9M powered serial plus Charger	ST4005

Snap Modules

NOTE The Snap Modules are shipped with their own quick start guide (Omnii Snap Modules Quick Start Guide, PN 8000220). The guide should be reviewed for additional information and updates.

Snap Modules are mobile power chargers for the Omnii. They are compatible with the AC wall adaptor (Model ST1050 or ST1050-AR) and the Vehicle Power Outlet Adaptor (Model ST3113).

Three types of Snap Modules are available:

- **Model ST4000** (Charger only variant): powers and charges the hand-held.
- **Model ST4001** (USB variant): powers and charges the hand-held. It provides communications via USB 1.1/2.0 Host and USB 2.0 Client connectors and provides a DC IN port. When attached to the Omnii, it allows ActiveSync or Windows Mobile Device Center connectivity with your PC, and the use of a USB device such as a USB memory key or supported peripheral.
- **Model ST4005** (Serial variant): provides a powered DE9M serial connector. It powers and charges the Omnii, and provides serial communications to tethered devices. The DE9M connector is capable of speeds up to 115,200 bps. Pin 9 is reserved for 5V power out and is defaulted to **off**. To enable power to this port, in your Omnii desktop, go to *Control Panel>Scanners*, which opens the *Scanner Settings* menus. In the *Ports* menu, select **on** for the *Power* parameter under the COM6 port.

Figure 4-5 *Snap Module Ports*

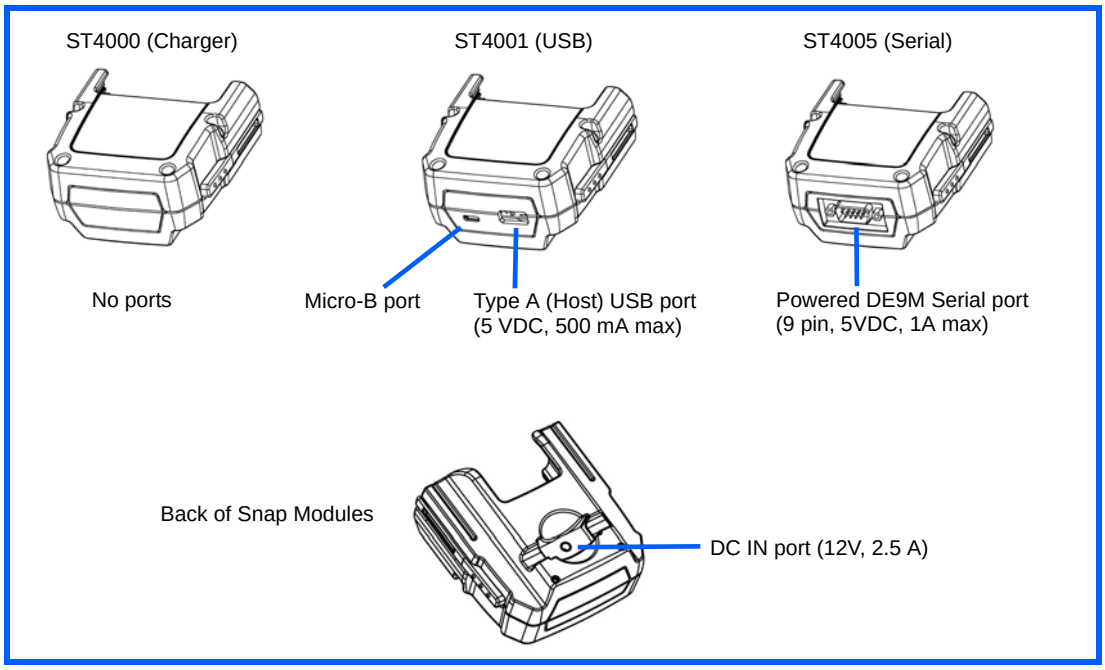
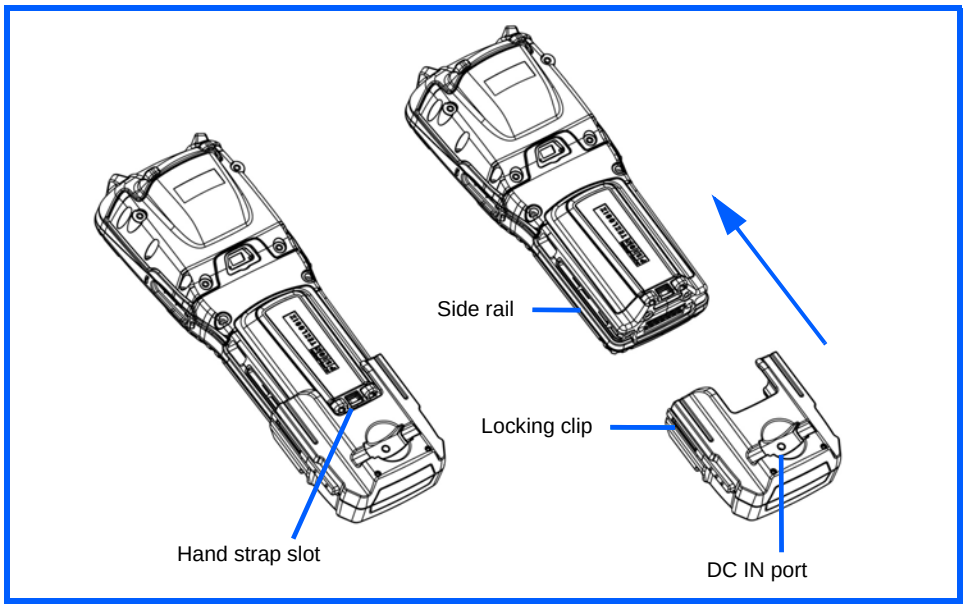


Figure 4-6 *Snap Module Installation*



To attach the Snap Module charger to the Omnii:

- Make sure that the charger connector and the Omnii docking connector are free of dust or any other debris before connecting them.
- A slot in the side rail on each side of the hand-held accommodates the locking clips of the charger. To attach the charger, align it with the base of the hand-held and gently slide up until the locking clips snap into place (Refer to Figure 4-6 Snap Module Installation on page 4-8).
- To remove the charger, press down on the base of the clip arms to release them from the Omnii side rails and slide the adaptor off.

- Connect the charger to an AC or DC power source using the appropriate regional plug or cable. Then connect the charger DC plug into the Snap Module DC jack. You can also attach an ST4001 or ST4005 Snap Module to the Omnii and use the Omnii battery to power USB or serial peripherals, for enhanced mobility.

NOTE If you are using a hand strap, there is no need to remove it before installing the Snap Module, since the Omnii hand strap slot will still be accessible.

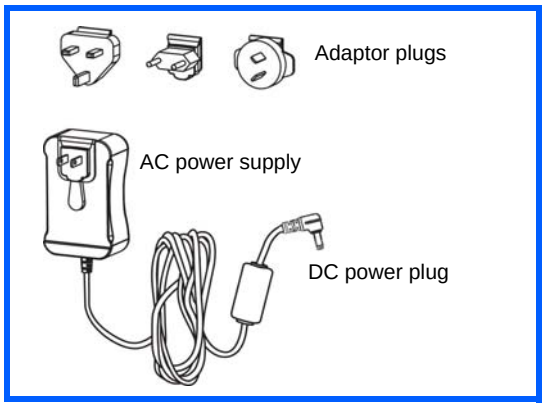
AC Wall Adaptor - Models ST1050 and ST1050-AR

The AC wall adaptor available for your docking station or Snap Module allows you to operate your hand-held using AC power while charging the battery inserted in the unit.

The ST1050 is shipped with adaptor plugs suitable for use in the following regions: United Kingdom, Australia, Europe and North America.

- Choose the adaptor plug that is suitable for use in your country. Slide the adaptor plug into the Universal AC power supply, snapping it into place. These two pieces, coupled together, are referred to as an AC wall adaptor.
- Insert the DC plug into the docking station or Snap Module jack.
- Plug the pronged end into an AC outlet.

Figure 4-7 *ST1050 AC Wall Adaptor and plugs*



The ST1050-AR wall adapter is kitted with an AC plug that is suitable for use in Argentina.

Vehicle Power Outlet Adaptor - Model ST3113

The Vehicle Power Outlet Adaptor allows you to power your hand-held and recharge your battery using power drawn from your vehicle's automotive power outlet when used in conjunction with a Snap Module.

Figure 4-8 *ST3113 Vehicle Power Outlet Adaptor*

- Attach a Snap Module to the base of the hand-held. Refer to "Snap Modules" on page 4-7 if you require further details.
- Insert the DC power plug on the Vehicle Power Outlet Adaptor into the DC IN port on the Snap Module.

- Insert the Vehicle Power Outlet Adaptor plug into automotive power outlet in your vehicle.

NOTE Battery charging continues whether the hand-held is switched on or off.

Chargers and Docking Stations: General Information

Important Charger Safety Instructions

IMPORTANT Before charging a battery with a desktop docking station, it is critical that you review the safety guidelines in the Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191) and the Omnii Hand-Held Accessories Regulatory & Warranty Guide (PN 8000205).

Charging the Battery

The Omnii Hand-Held Computer operates with lithium-ion battery pack Model ST3001. Preparing the unit for operation requires that the battery pack be charged and installed in the hand-held.

Batteries shipped from the factory are charged to approximately 40% of capacity. Lithium-ion battery packs must be fully charged before use. These batteries can be charged with a variety of chargers and docking stations. Currently the following are available:

- The Snap Module is a mobile adaptor for the Omnii. Three models are available — see “Snap Modules” on page 4-7.
- The AC Wall Adaptor operates as an AC power source and also charges the battery installed in the unit — see “AC Wall Adaptor - Models ST1050 and ST1050-AR” on page 4-9.
- The Vehicle Power Outlet Adaptor powers the Omnii and recharges the battery using power drawn from your vehicle’s automotive power outlet — see “Vehicle Power Outlet Adaptor - Model ST3113” on page 4-9.
- The Desktop Docking Stations operate as both chargers and docking stations. Operating as a charger, both the battery installed in the Omnii and a spare battery can be charged. Priority is given to charging the hand-held's battery. See “Desktop Docking Stations - Models ST4002 and ST4003” on page 4-11.

Normally it takes 3 to 4 hours to charge a battery. The Omnii intelligent charging system protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.

% Charge Completed	During Sleep Mode	While Operating
100%	4 hrs.	8 hrs.
75%	2 hrs.	6 hrs.

IMPORTANT To avoid damaging the battery, chargers will not begin the charge process until the battery temperature is between 0°C to 40°C (32°F to 104°F).

Installation — Chargers and Docking Stations

When installing a charger or docking station, consider the following guidelines.

- Keep chargers and docking stations away from excessive dirt, dust, water and other liquids, and contaminants.

- Chargers will not charge batteries outside an ambient temperature range of 0°C to 40°C (32°F to 104°F). It is recommended that the charger or docking station be operated at room temperature — between 18°C and 25°C (64°F to 77°F) for maximum performance.

After unpacking your unit:

- Visually inspect the charger for possible damage.
- Install the IEC power cord (if applicable) and apply power.

Operator Controls

The Omnii docking stations and chargers have no operator controls.

Power Consumption Considerations

Check to ensure the mains circuit supplying chargers and/or docking stations is adequate for the load, especially if several chargers and docking stations are being powered from the same circuit.

Desktop Docking Stations - Models ST4002 and ST4003

Specialized versions of the desktop docking station are available for Argentina and Korea. For Argentina, model number ST4002-AR is packaged with a wall adaptor and a suitable, regional AR plug. For Korea, model number ST4002-KR is packaged with a wall adaptor and a KR plug.

IMPORTANT The desktop docking station is shipped with its own quick start guide (ST4002 and ST4003 Desktop Docking Stations Quick Start Guide, PN 8000203). It is critical that it be reviewed for additional information and updates.

The Omnii can be inserted into two desktop docking stations which are designed to charge the battery installed in the hand-held along with a spare battery pack: Models ST4002 and ST4003.

IMPORTANT These docking stations can only be used to charge Motorola approved lithium-ion batteries.

The ST4002 and ST4003 desktop docking stations feature:

- Fast charging of the internal battery.
- Fast charging of the spare battery pack.
- A Host USB port to connect peripherals such as a printer, keyboard, etc.
- A Client USB port to connect the docking station to a PC.

NOTE The ST4002 desktop dock can be upgraded to include the DE9M and RJ45 interfaces by using the ST4100 Xmod (Expansion Module).

The ST4003 desktop docking station additionally provides:

- A DE9M serial port (unpowered) and an RJ45 10Base-T Ethernet interface. Both these interfaces are compatible with the USB to Ethernet/serial drivers included in the Omnii (see Figure 4-10 Back of ST4003 Desktop Docking Station on page 4-12).

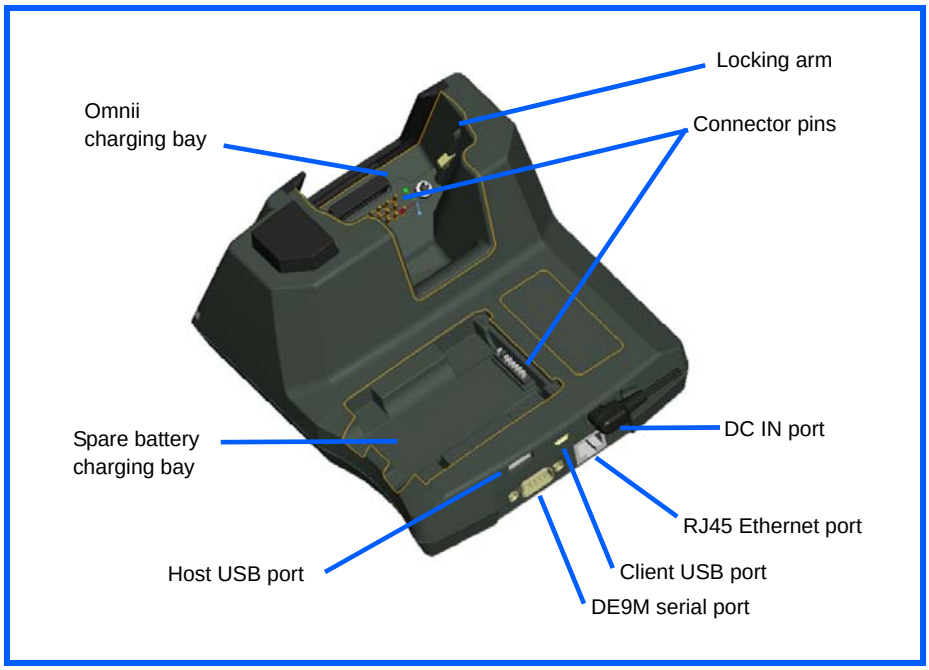
Figure 4-9 *Desktop Docking Station - Models ST4002 and ST4003*

Omnii charge indicator LED (far left)
(Indicates charge status of internal Omnii battery.)
Omnii charging bay
Release button
Spare battery
Spare battery charging bay
Spare battery LED
(Indicates charge status of a spare battery inserted in the rear charging bay of the docking station.)

The desktop docking station storage temperature is -30°C to +60°C (-22°F to 140°F). Operating temperature and humidity are: 5 - 95% non-condensing and 0°C to 40°C (32°F to 104°F).

The desktop docking station uses careful charge algorithms designed to maximize battery life while ensuring the shortest possible charge time. See "Battery Details" on page 2-3 for more information regarding battery capacity, charge times and battery life. See "Charging the Spare Battery" on page 4-13 for spare battery charge information.

Figure 4-10 *Back of ST4003 Desktop Docking Station*



Charging a Battery Installed in the Omnii

- Insert the DC power cable to the DC IN port on the desktop docking station. Plug the pronged end of the cable into an AC outlet.
- Slide the hand-held into the docking station, making certain that the hand-held is securely seated on the docking station connector pins and engages the locking arms of the docking station. When the Omnii is switched on, a message is displayed briefly on the screen indicating that the unit is properly installed in the station and the docking station icon is displayed in the taskbar.

The LED on the Omnii lights up indicating that the unit has external power and battery charging will begin. It is safe to leave the unit in the desktop docking station while it is not in use — the battery will not be overcharged.

Indicators

The front-mounted LED on the desktop docking station indicates the spare battery charge status. The LED on the Omnii is active even when the hand-held is inserted in a docking station (and in suspend mode) so that the charge status of the battery can be detected easily.

Charge LED Behaviour	Function
OFF	No battery detected.
Solid Green	Battery charging complete.
Flashing Green	Charge in progress.
Flashing Yellow	Battery is not charging due to out-of-temperature conditions.
Solid Red	A charging timeout, unable to read battery, or non Motorola battery.

Operation

Charging the Omnii Battery

The desktop docking station supplies DC power to enable the Omnii internal fast charger.

When installed in the dock, the Omnii battery charge LED will illuminate to indicate the unit has external power and can charge the internal battery. The Omnii charge indication follows the same convention as the charger's spare battery indicator (Figure 4-9 Desktop Docking Station - Models ST4002 and ST4003 on page 4-12).

NOTE Battery charging continues whether the Omnii is switched on or off.

Charging the Spare Battery

IMPORTANT Do not store spare batteries in a charger for more than 72 hours. Doing so may damage the battery or reduce its charge capacity.

- Install the battery in the battery charging bay (rear slot of the desktop docking station). Place the battery contacts down to mate with the connector, and pivot the battery into place in the battery charging bay.
- The desktop docking station spare battery LED lights up immediately. During charge the LED will be flashing green.
- When the battery has finished charging, the LED turns solid green.
- The charge stops when the battery is fully charged and the LED remains green.

A full charge will take 3 to 4 hours for a 5000 mAh battery. This may take up to 8 hours if the hand-held is also docked and charging.

Cleaning the Desktop Docking Station

IMPORTANT Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.

- Use only mild detergent or soapy water on a slightly damp cloth to clean the desktop docking station. Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The plastic case is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.

Troubleshooting

The indicators, applications, and drivers required to use and monitor the desktop docking station as a dock (as opposed to a charger) are installed on the Omnii — no applications are present on the docking station itself.

Docking station does not seem to power on.

- When first connected to the DC power supply, the charger LED should flash a sequence of red, yellow, and green.
- If not, the charger is defective and requires service.

The Omnii charge indicator LED stays off.

When the Omnii is docked into a powered desktop docking station and the Omnii charge indicator LED stays off, there could be a problem with the hand-held or with the docking station. Use a hand-held with a properly functioning charge indicator to isolate the problem.

NOTE The desktop docking station charge LED only shows the status of the spare battery.

The Omnii charge indicator LED is red.

If the Omnii charge indicator is red when the hand-held is docked:

- Remove the Omnii and disconnect the adaptor DC power cable.
- Wait at least 20 seconds, and then plug the cable in again.
- If the Omnii indicator still shows a fault, the hand-held requires service.

Spare battery LED is red with a battery installed.

- Try inserting a battery that is known to be working with another charger.
- If the charge slot LED continues to show red with the known working battery, the charger is defective and requires service.
- Your Motorola battery and desktop docking station are carefully designed for safety and capacity performance. If the battery or charger are not Motorola approved products, or the safety mechanism is faulty, the spare charge slot LED or the Omnii LED will display red.

Spare battery LED does not turn on when a battery is installed.

- Inspect the charge slot contacts for damage (are they bent, flattened, twisted or broken?).
- Reinstall the battery and check that it is fully seated in the slot.

- Try inserting a battery that you know to be working into the charger slot.
- Disconnect and reconnect the DC adaptor, and check that the spare battery LED indicator flashes at power-up.
- If the charge slot fails to charge the known working battery, it is defective and requires service.

Quad Docking Station – Model No. ST4004

IMPORTANT The quad docking station is shipped with its own quick start guide — Omnii ST4004 Quad Docking Station Quick Start Guide (PN 8000222). It is critical that it be reviewed for additional information and updates.

IMPORTANT When ordering a charger, you must also order an IEC-320/IEC-60320 C13 power cord separately.

Figure 4-11 *Front view*

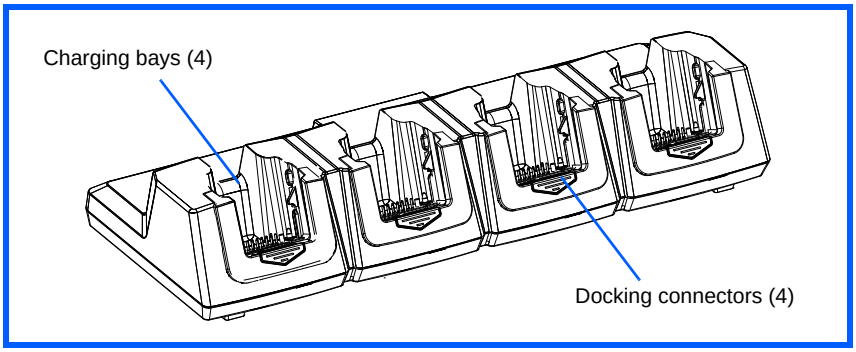
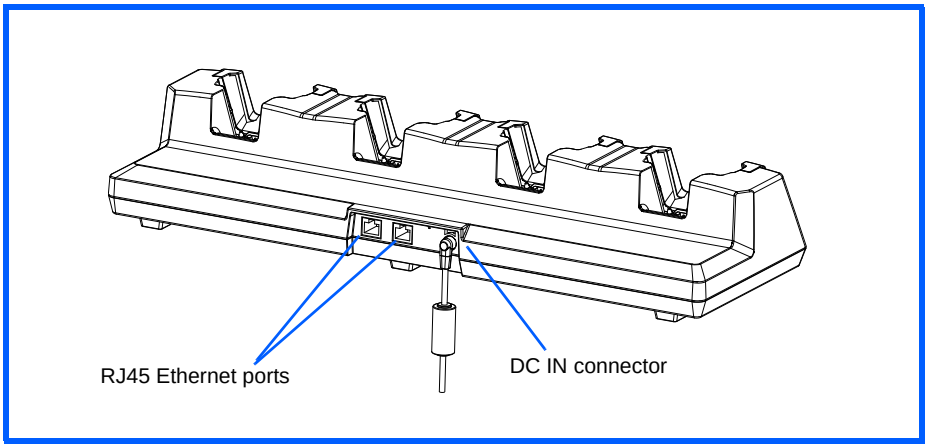


Figure 4-12 *Rear view*



The ST4004 Quad Docking Station is designed to accept up to four Omnii hand-held computers. The docking station powers the units and their internal battery charger. The docking station also connects up to four of the hand-held computers to a 10/100 Base-T Ethernet network and allows for Ethernet data transfer. An additional Ethernet interface is available for connecting more docking stations downstream, up to 4 on the same network.

Operator Controls

The ST4004 has no operator controls or power switch.

Indicators

The quad docking station is equipped with Ethernet activity and link LEDs (see Figure 4-14 Ethernet network connection on page 4-17).

Quad Docking Station Operation

Charging the Omnii Battery

- Insert the DC power plug into the ST4004 rear DC IN connector (see Figure 4-14 Ethernet network connection on page 4-17).

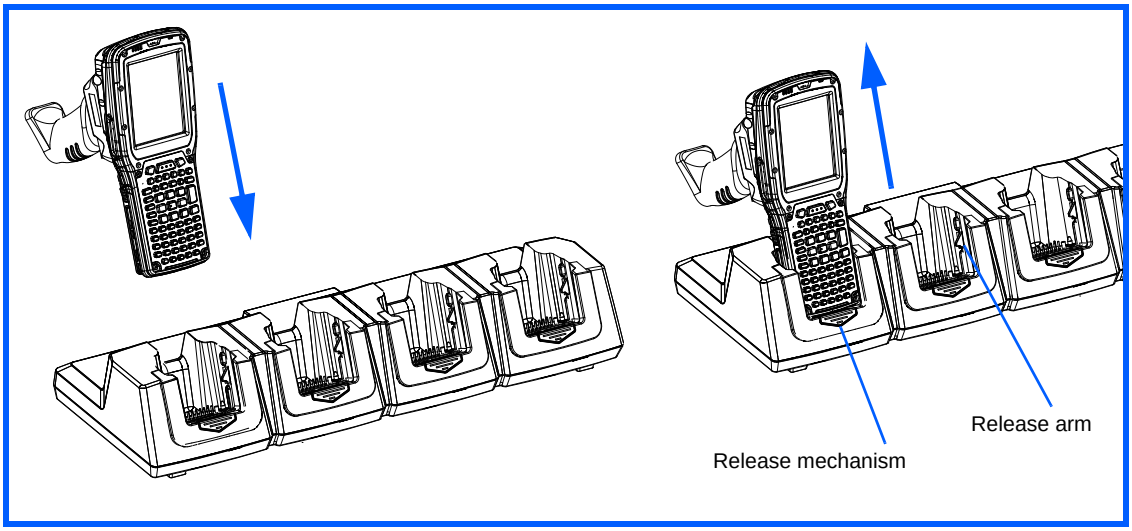
IMPORTANT Use IEC-320 C13 power cords approved by Motorola, with the ground pin connected to a proper earth-grounded receptacle. Check with a qualified electrician if you are uncertain of your receptacle grounding.

The ST4004 supplies DC power to enable the Omnii internal fast charger. Normally, a full charge of the battery will take from 3 to 4 hours.

- Insert up to four Omnii computers into the docking station charging bays, pressing down gently but firmly to seat them securely.
- During the charge, the Omnii LED slow flashes green.
- When the battery finishes charging, the LED turns solid green.
- To remove the Omnii, push down on the release mechanism on the front face of the docking bay. The hand-held will detach from the docking bay release arms and can be pulled up and out.

NOTE Battery charging continues whether the Omnii is switched on or off.

Figure 4-13 *Insertion and removal of Omnii computers*



Installation

Place the charger in an area that is free from excessive dirt, dust, water and other liquids, and contaminants. The ambient temperature must be in the range 0° C and 40° C (32° F to 104° F). The docking station will not charge batteries outside of this temperature range. For maximum performance, it is recommended that the charger be operated at room temperature — a temperature range between 18°C to 25°C (64°F to 77°F).

Connecting to the Ethernet Network

Network Access

The Omnii automatically detects insertion into the docking station and loads the appropriate drivers to communicate with the network. To connect more docking stations downstream (up to 4 on the same network), use the Ethernet cable supplied with your quad docking station as the daisy chain cable (see Figure 4-15 Daisy chain configuration on page 4-17).

Figure 4-14 *Ethernet network connection*

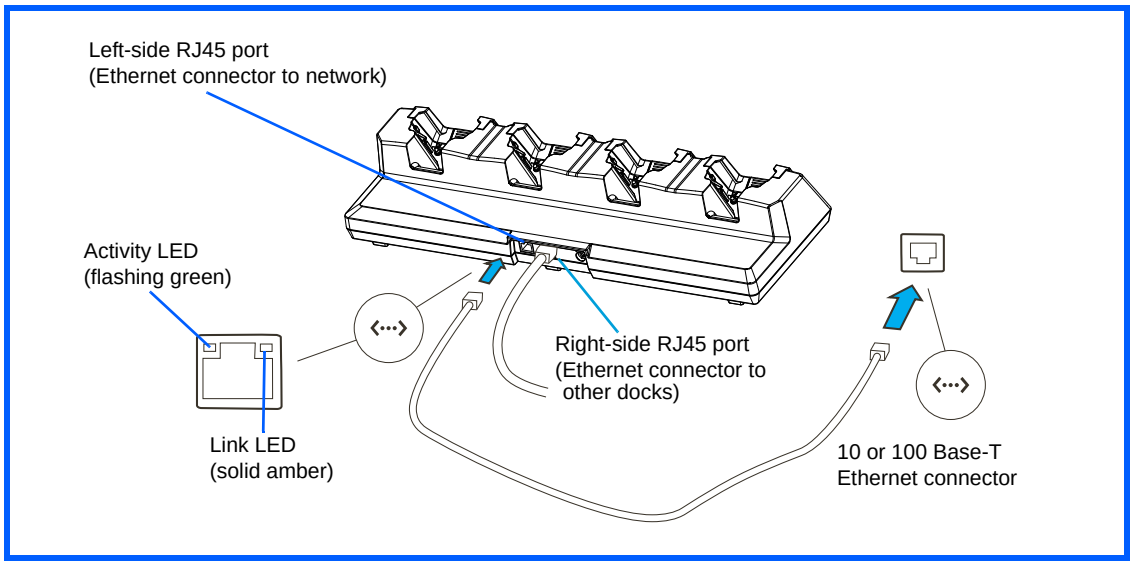
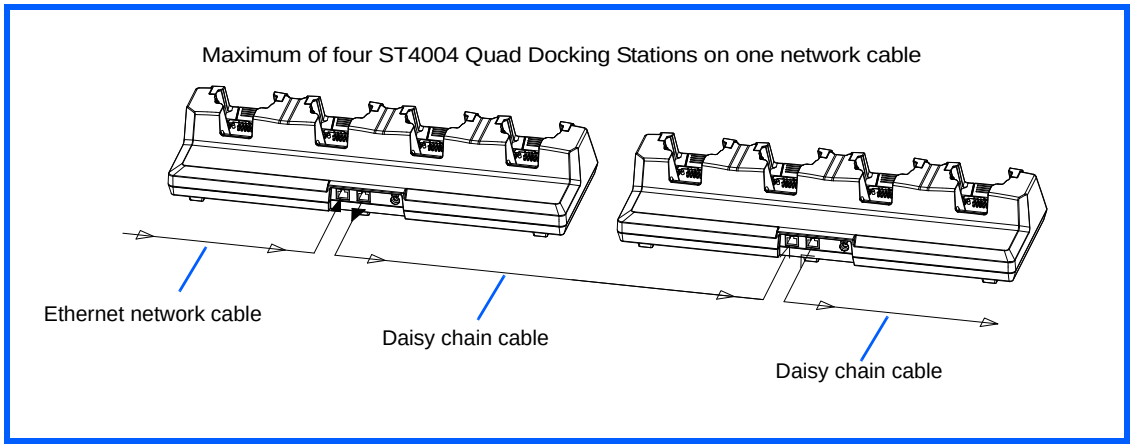


Figure 4-15 *Daisy chain configuration*


Maximum of four ST4004 Quad Docking Stations on one network cable
Ethernet network cable
Daisy chain cable
Daisy chain cable

Cleaning the ST4004

IMPORTANT Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.

Use only mild detergent or soapy water on a slightly damp cloth to clean the ST4004. Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The plastic case is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.

Troubleshooting

The Omnii Charge Indicator LED Stays Off

When the Omnii is docked in a powered ST4004 and the hand-held's charge indicator LED stays off, there may be a problem with the Omnii or with the docking station. Make sure a battery is installed in the Omnii, otherwise use an Omnii with a properly functioning charge indicator to isolate the problem.

Power LED Does Not Light Up

- Remove all Omnii units, and unplug the docking station.
- Connect another device to the mains outlet to ensure there is power.
- Remove the IEC mains power cable from the charger, and check it for damage.
- Reconnect the mains cable in the charger and mains outlet.

The Omnii Charge LED Flashes Yellow

A flashing yellow Omnii charge LED (the left-most LED on the hand-held) indicates that the battery is not within the allowable charging temperature range – 0° C and 40° C (32° F to 104° F). Allow the battery to come to an acceptable range before reinserting the Omnii in the docking station.

The Omnii Charge Indicator LED is Red

If the Omnii charge indicator is red when the Omnii is in any of the four bays, the quad dock cannot read the battery, is in charging timeout, or it is not a Motorola battery.

- Remove the computers and disconnect the adaptor DC power cable.
- Wait at least 20 seconds, and then plug the cable in again.
- If the Omnii indicator still shows a fault, the Omnii requires service.

Powered Adaptor LED Stays Off

- Check the AC cable. Replace with the same type if the cable is suspect.
- If the adaptor LED stays OFF, the adaptor is defective and requires service.

Vehicle Cradles - Models ST1000 and ST1002

IMPORTANT The vehicle cradles are shipped with their own quick start guide — Omnii Vehicle Cradles Quick Start Guide (PN 8000221). It is critical that it be reviewed for additional information and updates.

The Omnii vehicle cradles are highly ruggedized, single station docks. Although they provide quick insertion and removal, the cradles hold the Omnii securely even when operated in high vibration environments (such as vehicles not equipped with suspensions).

The Omnii vehicle cradle is available in two models:

- Model ST1000 - Unpowered cradle.
- Model ST1002 - Powered cradle with communications port. A DE9M serial port (powered) and two USB Host interfaces.

Figure 4-16 *Front and back of ST1002 with Omnii*

Motorola also supplies a range of standard mounts for the hand-held vehicle cradles, and the Omnii vehicle cradles are compatible with all of them.

Vehicle Cradle Mounting Recommendations

WARNING **Before mounting a vehicle cradle in a vehicle, there are a number of operator safety issues that require careful attention. An improperly mounted cradle may result in one or more of the following: operator injury, operator visibility obstruction, operator distraction and/or poor ease of egress for the operator. Motorola strongly recommends that you seek professional mounting advice from the vehicle manufacturer.**

Ensure that you read the ST1002 Vehicle Cradle Installation Instructions document (PN 1020305), enclosed with the ST1002, for important safety information on connecting fuses.

Cable routing within a vehicle cab also requires careful consideration, especially for devices with loose cables. If you are unable to obtain suitable advice, contact Motorola for assistance. Note also that for better protection, the equipment should be mounted inside the vehicle roll cage.

Pedestal mounts are recommended for all fixed mount locations because they offer optimal operator access. In addition, for safety reasons, only pedestal mounts with fully locking joints should be used in vehicles. Always adjust the pedestal for the optimum viewing angle, and securely tighten the hex and wing screws.

The most effective way to mount the vehicle cradle is to use brackets with the MT3324 (short arm) or MT3325 (standard arm) kit. The ST1002 requires either the MT3326 or MT3327 bracket; the ST1000 requires the MT3328 bracket.

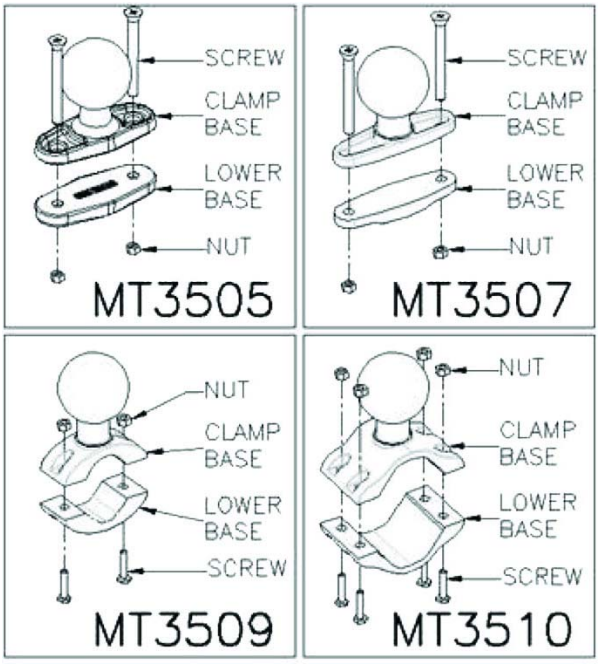
IMPORTANT It is strongly recommended that all forklift mounting solutions use clamp bases rather than plate bases that require penetrating through the vehicle for installation.

A ***clamp base*** is required to secure the vehicle cradle/arm assembly to the vehicle. Choose from one of the following clamp base sizes:

- MT3505
- MT3507

Model	Rail Width
MT3505	Clamp base (for 4" or 12" RAM arm), 2" max. width
MT3507	Clamp base (for 4" or 12" RAM arm), 3" max. width
MT3509	Rail base (for 4" or 12" RAM arm), 1-1/4" to 1-7/8"
MT3510	Rail base (for 4" or 12" RAM arm), 2" to 2 1/2"

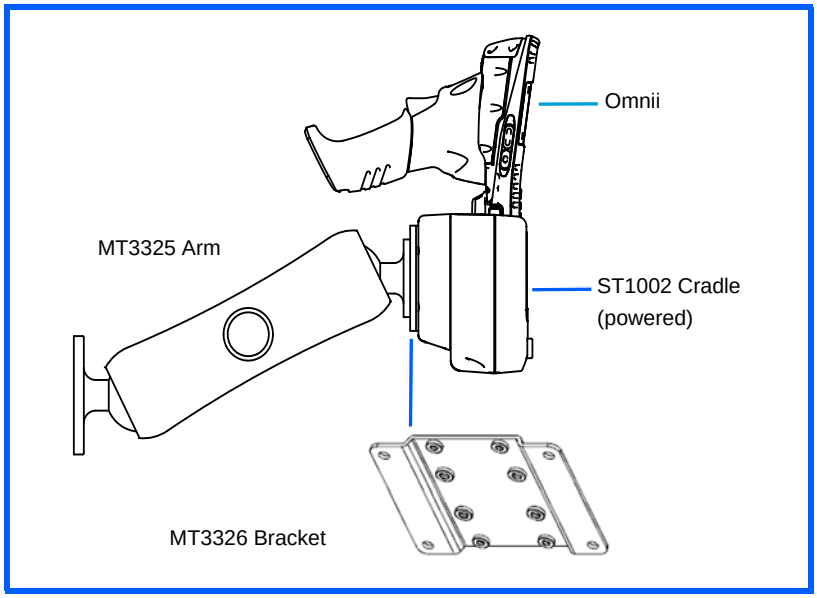
Figure 4-17 *Clamp and Rail Bases (Torque to 26 in-lbs)*



IMPORTANT Plate bases are not recommended for forklift mounting solutions. If a plate rather than a clamp base is used, you will need to penetrate into the structure of the vehicle, a process requiring additional hardware. The following plate bases are available:

- VESA Plate – MT3501
- Circular Plate – MT3502

Figure 4-18 *MT3325 Standard Arm Kit with Omnii Vehicle Cradle Clamp and Rail Bases (Torque to 26 in-lbs)*



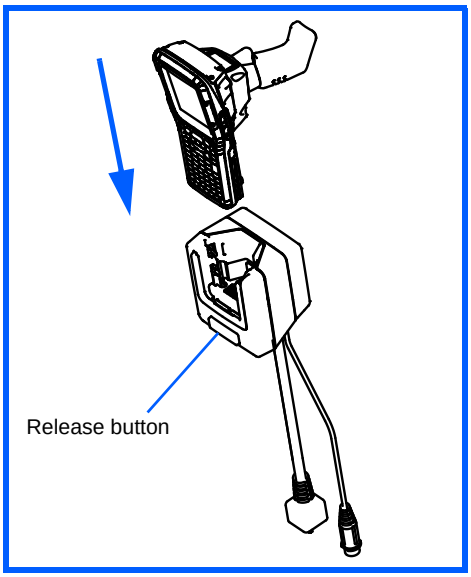
To accommodate the service loop of the connector cable, leave a 4" clearance at the bottom of the cradle. Leave a 7" (minimum) clearance at the top of the cradle to allow easy removal of the hand-held. Refer to the detailed assembly instructions that are packaged with the cradle when selecting a mounting location (*Omnii Vehicle Cradles Quick Start Guide PN 8000221*).

Insertion and Removal of Omnii

If your Omnii is equipped with a cover, or the ST6025 Double Loop Hand strap, these accessories need to be removed before installing the unit in a vehicle cradle. There is no need to remove other hand straps or pistol grips from the unit.

- Slide the Omnii into the cradle, and press firmly downward until it locks into place. On a vehicle, it's a good idea to pull up on the Omnii to be certain that it is secure.
- To remove the Omnii, press the release button on the front of the cradle until it releases.

Figure 4-19 *Inserting Omnii into the vehicle cradle*



Maintaining the Vehicle Cradle

Two latches in the cradle hold the Omnii firmly in place. Although these latches are designed for at least 100,000 insertion and removal cycles, they will wear over time and will no longer lock the Omnii securely in the cradle. For replacement parts and instructions contact Motorola. Partial disassembly is required.

ST1002 Powered Cradle Installation

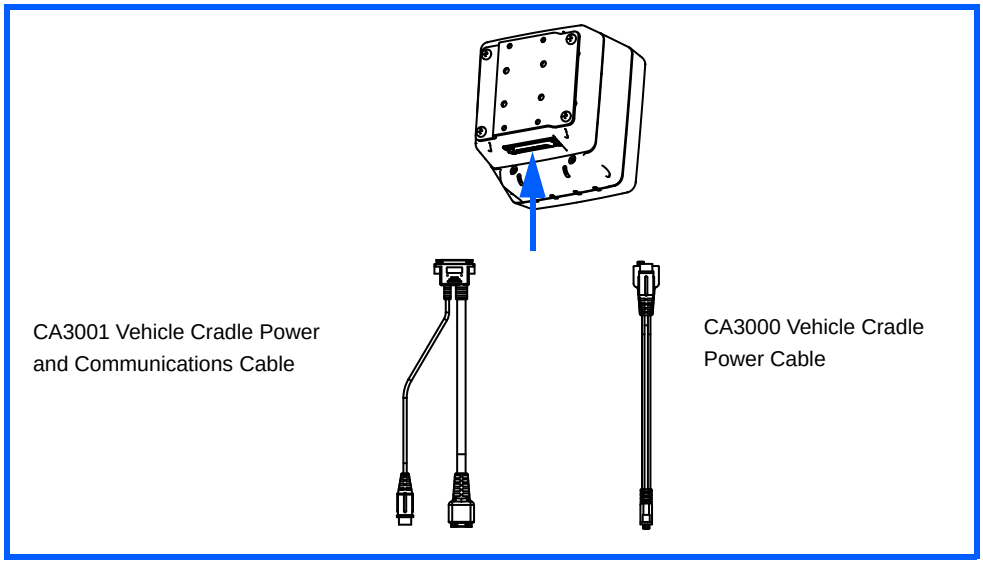
The ST1002 cradle is designed to allow the Omnii to be powered by a vehicle battery. The battery installed in the Omnii is also recharged by the vehicle battery. This option accepts DC power sources over the range 11.5V to 30V. Voltages above that require the use of the preregulator (Model No. PS1350).

WARNING **Applying a voltage greater than that specified, or reversing polarity, may result in permanent damage to the cradle power option and will void the product warranty.**

Operating an Omnii XT15f Arctic unit in operating temperatures from -30°C to +50°C, requires the use of the power preregulator Model No. PS1370.

The ST1002 Vehicle Cradle has a 44-pin connector that allows connection with either the CA3001 Vehicle Cradle Power and Communications Cable (DE9M serial port, 2 USB Host interfaces, and power cable) or the power-only CA3000 Vehicle Cradle Power Cable. For connector pinouts and a cable connections diagram, see “Cable Connectors for Vehicle Cradle Model ST1002” on page A-5.

Figure 4-20 *Connecting to vehicle power*



For a diagram of a power with communications setup, see Figure 4-21 Connecting ST1002 to vehicle power and communications in a typical setup on page 4-25.

The Omnii charging LED (see "Battery Charge Status LED" on page 2-11) indicates that external power is available, and it also indicates the charging status of the internal battery.

Wiring Guidelines

Before installing the cables between the cradle and other devices, consider the following:

- Ensure that drilling holes will not damage the vehicle or its wiring.
- Protect cable runs from pinching, overheating and physical damage.
- Use grommets to protect cables that pass through metal.
- Use plastic straps and tie-downs to secure cables and connectors in their desired location, away from areas where they may get snagged or pulled.
- Keep cables away from heat sources, grease, battery acid and other potential hazards.
- Keep cables away from control pedals and other moving parts that may damage the cables or interfere with the operation of the vehicle.

Installation in High Voltage Vehicles

WARNING **Voltages exceeding 30VDC are considered hazardous. Installation of powered cradles in vehicles that operate above 30VDC require special consideration, as listed below.**

Due to the hazardous voltages present on these vehicles, it is necessary to ensure that the powered cradle power supply cable connector is not accessible to the vehicle operator, and does not get exposed to water or other liquids. ***Exposing an accessible power connector to water or other liquids could create a hazardous situation resulting in serious injury or death.*** Avoiding this hazard can be accomplished in the following way.

- Use the PS1350 pre-regulator or, for freezer applications (-30°C), the PS1370 pre-regulator.

- Ensure the power connector is wrapped securely with a waterproof electrical tape and installed in a dry location on the vehicle, away from the vehicle operator's reach (perhaps under a vehicle dash or in a sealed housing).
- Cover the power connector with a waterproof heat shrink material (see "Extreme Wet Environments" on page 4-24 for additional details).

All other installation requirements outlined in this document should also be followed for High Voltage vehicles to insure safe installation and operation of the powered cradle.

Extreme Wet Environments

For extreme wet environments, or environments where it is difficult to restrict vehicle operator access to the power connector, Motorola offers a waterproof heat shrink kit (PN 1030022). The kit contains 3 pieces of waterproof, high shrink ratio heat shrink tubing which can be used to encapsulate the entire connector assembly. If using this kit, please ensure that you order sufficient material to cover installation and service, remembering that heat shrink is one-time use, and must be replaced if it is removed from the connector for any reason.

Wiring Vehicle Power and Communications to the Cradle

An optional 1.8 meter (6 foot) extension power cable (PN 13985-301 with motion detect or 13985-302) is available for your powered vehicle cradle. This cable should be wired to a filtered, fused (maximum 4A) accessory supply on the vehicle. The power cradle draws no more than 4A (less if the accessory supply is greater than 12V). Any additional wiring, connectors or disconnects used should be rated for at least 10A. Installation of the 19440-XXX fuse assembly using a 4A 250V fuse installed is mandatory, except when using a CA3002 vehicle power cable. The 13985-XXX cables are not used with the CA3002. The 4A fuse is already included in the CA3002 vehicle connector assembly.

NOTE When connecting PN 13985-301 (Screen Blanking version), ensure that the screen blanking wires (clearly labelled) and the power wires (red/black leads) are reliably secured away from each other, or are separated with reliably secured certified insulation. A minimum 2.8mm distance, or 0.4mm distance through insulation, is required for the separation.

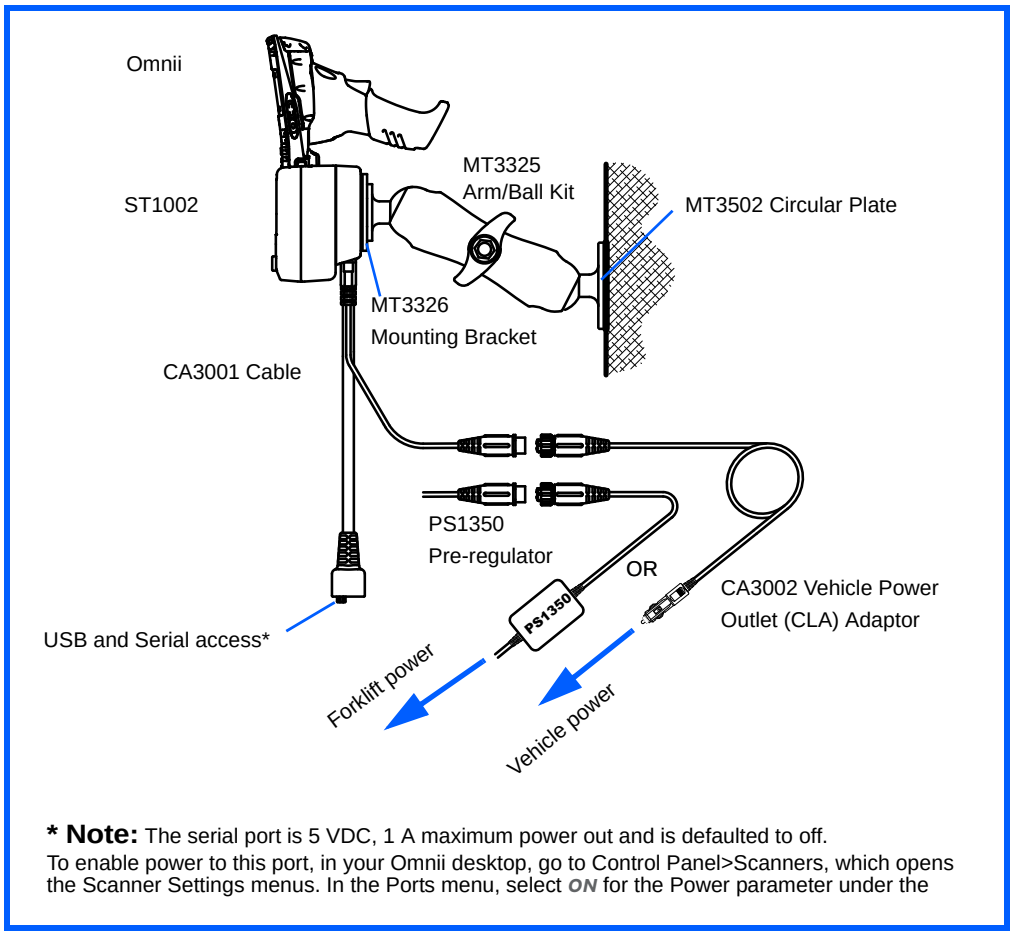
The red lead of the power cable attaches to the positive vehicle supply. The black lead connects to the negative supply — this should be connected to a proper terminal block and not to the vehicle body.

You may have the option of connecting power before or after the *key* switch. It is preferable to wire the power cradle after the key switch — that is, it cannot be turned on without the key on. However, if the operator switches the key off repeatedly for long periods during a shift, it may make more sense to wire the cradle before the switch.

Keep in mind that the Omnii will continue to operate with or without vehicle power as long as its battery has sufficient charge. If an unfused power source must be used, a fuse assembly (PN 19440-300) must be added to the extension power cable (the fuse and instructions are supplied with the cable). Use only a 4A fast blow UL approved fuse in the fuse assembly (PN 9016622).

WARNING **11.5–30 Vdc input only, suitable for road vehicles. A pre-regulator is required for use on forklifts. For such installations Motorola recommends using the PS1350 (15-90 VDC) pre-regulator or, for freezer applications, the PS1370 pre-regulator.**

Figure 4-21 *Connecting ST1002 to vehicle power and communications in a typical setup*


Omnii
ST1002
MT3325
Arm/Ball Kit
MT3502 Circular Plate
MT3326
Mounting Bracket
CA3001 Cable
PS1350
Pre-regulator
OR
CA3002 Vehicle Power
Outlet (CLA) Adaptor
USB and Serial access*
PS1350
Forklift power
Vehicle power
* Note: The serial port is 5 VDC, 1 A maximum power out and is defaulted to off.
To enable power to this port, in your Omnii desktop, go to Control Panel>Scanners, which opens the Scanner Settings menus. In the Ports menu, select ON for the Power parameter under the

NOTE For the CA3002 Vehicle Power Outlet (CLA) Adaptor, replace with same fuse type and rating.

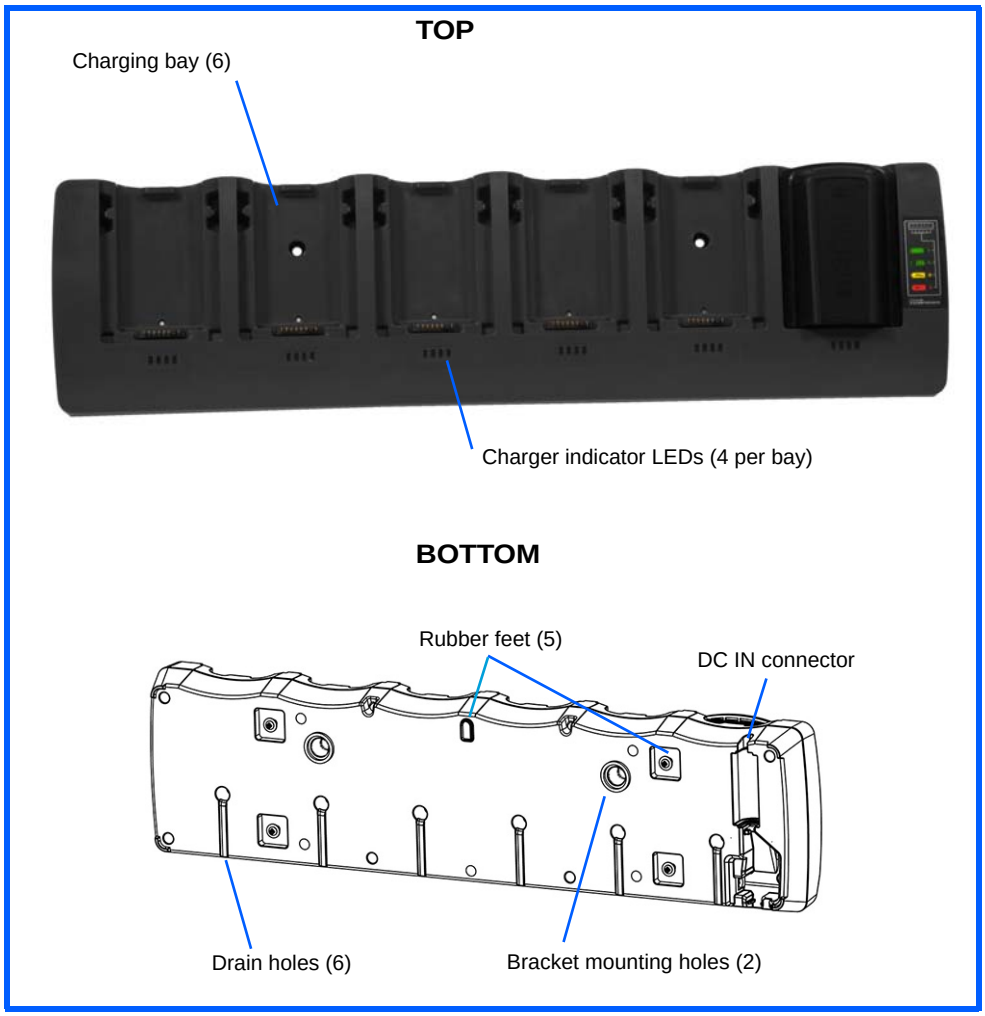
Battery Charger (6-Slot) - Model ST3006

The ST3006 is designed to charge up to six Omnii lithium-ion batteries at one time.

IMPORTANT The battery charger is shipped with its own quick start guide — ST3006 6-Slot Battery Charger Quick Start Guide (PN 8000204). It is critical that it be reviewed for additional information and updates.

IMPORTANT When ordering a charger, you must also order an IEC-320/IEC-60320 C13 power cord separately.

Figure 4-22 *ST3006 Battery Charger*



Installation

The charger can be wall mounted using the wall mount kit (MT2031) or it can be operated on a flat surface. Install the charger in an area that is free from excessive dirt, dust and contaminants. The ambient temperature must be in the range 5°C to 39°C (41°F to 102°F). The charger will not charge batteries outside of this temperature range. For maximum performance, it is recommended that the charger be operated at room temperature — a temperature range between 18°C to 25°C (64°F to 77°F).

The charger can consume up to 6 A at 120 VAC, 3A at 240 VAC. Check to ensure the mains circuit supplying the charger is adequate for this loading (especially if several chargers are being powered from the same circuit). After unpacking the unit:

- Visually check the charger for damage.
- Install the IEC power cord and apply power.

IMPORTANT Use IEC-320 C13 power cords approved by Motorola, with the ground pin connected to a proper earth-grounded receptacle. Check with a qualified electrician if you are uncertain of your receptacle grounding.

All charge indicators flash momentarily at power up to indicate that the charger is ready for operation.

If you choose to wall mount the charger, detailed installation instructions are included in the *Omnii 6-Slot Battery Charger ST3006 Quick Start Guide (PN 8000204)* included with the charger kit. Be sure to locate the charger in an area where there is no risk of injury to persons walking in the vicinity.

Operator Controls

The gang charger does not have operator controls or a power switch. There is no dedicated indicator light to show that the charger is powered, but the charge slot LEDs will light up briefly when first applying power.

Charge Indicators

Each battery charge slot is equipped with four LEDs to indicate the charge status of the battery. When the Omnii batteries are inserted in the charger, the colour and behaviour of the LEDs associated with the charging bays in use indicate the status of the charge.

Charge LED Behaviour	Function
OFF	No battery detected.
Solid Green	Battery charging complete. Each LED represents 25% battery capacity.
Flashing Green	Charge in progress. Each LED represents 25% battery capacity.
Flashing Yellow	Battery is not charging due to out-of-temperature conditions.
Solid Red	Unable to read battery, charging timeout, or non Motorola battery.

Charging Batteries

- Install the battery with the battery contacts facing the charger. Slide the battery between the guide rails until it lightly latches in place.

The 4-LED bar for the battery bay shows 25% charger per LED. A flashing green LED shows charging is under way. The LED directly below the slot in which a battery is inserted lights up immediately. If the battery temperature is outside 0°C to 40°C (32°F to 104°F), the LED flashes yellow until the temperature is acceptable. A fully discharged battery will normally take 4.5 hours to charge. At full capacity, it turns solid green.

When the battery is fully charged, the charger stops applying power; the battery cannot be overcharged if left in the charger slot.

Troubleshooting

Improper Battery Storage

Storing batteries in the gang charger for extended periods (more than a week or two) is not recommended. Lithium-ion batteries lose capacity if they are maintained at full charge for long periods of time. See the battery handling recommendations in “The Battery” on page 1-6.

Power Self-test LEDs Don’t Light Up

The charge slot LEDs will light up briefly when first applying power indicating the self-test mode. When applying power to the unit, all the LEDs will light up. Yellow will show up in the 25% LED for each bay; green for other LEDs. Then bay #1 will blink a binary representation of the firmware version (V09 = 1001). If the self-test is not evident:

- Remove all batteries, and unplug the charger.
- Connect another device to the mains outlet to ensure there is power.

- Remove the IEC mains power cable from the charger, and check it for damage.
- Reconnect the mains cable in the charger and mains outlet.

Indicator Does Not Light When Battery Installed

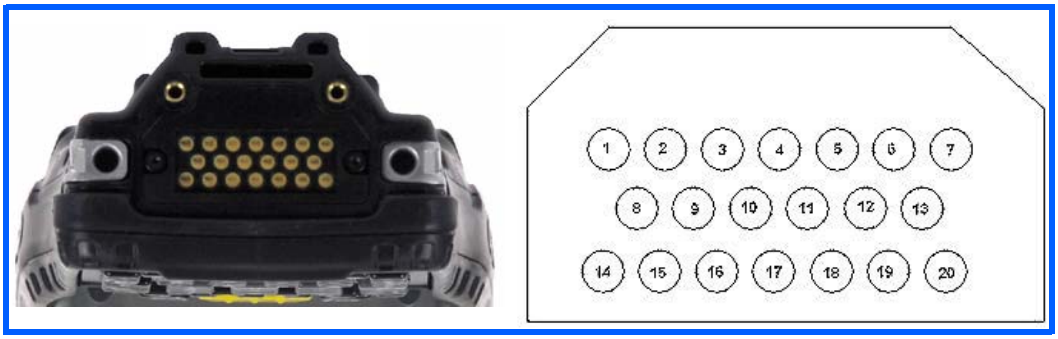
- Remove the battery, and clean the contacts on the battery and the charge slot.
- Reinstall the battery, and check that it is fully seated in the slot.
- Inspect the charge slot contacts for damage (are they bent, flattened, twisted or broken).
- Try inserting a battery that you know to be working in the charger slot.
- Reconnect the mains power cable, and check that the slot indicator flashes at power up.

APPENDIX A PORT PINOUTS

Omnii Docking Connector A-3
Snap Modules Connectors A-4
Cable Connectors for Vehicle Cradle Model ST1002 . . . . . A-5
Omnii Battery Contacts A-6

Omnii Docking Connector

The docking interface on the base of the Omnii is custom-designed to dock with a device via an array of spring-mounted pins.

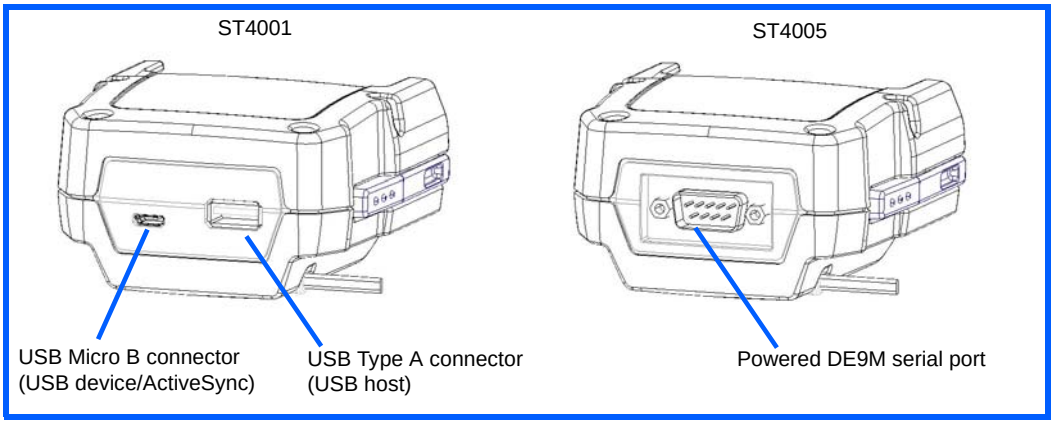


The following are the pin assignments of the interface.

Pin #	Signal	Pin #	Signal
1	GROUND	11	USB_OTG_P
2	DC_IN	12	USB_OTG_M
3	DOCK_LOW_PWR	13	CHARGE_IN
4	GROUND	14	GROUND
5	USB_OTG_VBUS	15	DC_IN
6	CHARGE_IN	16	UART_RX
7	GROUND	17	GROUND
8	DC_IN	18	UART_TX
9	USBH_P	19	CHARGE_DATA
10	USBH_M	20	GROUND

Snap Modules Connectors

- **Model ST4000** (Charger only variant): power and charge.
- **Model ST4001** (USB Host/Client variant): power, charge, communications via USB 1.1/2.0 Host and USB 2.0 Client connectors, DC IN port.
- **Model ST4005** (DE9M Serial variant): powered DE9M serial connector, power, charge, serial communications. Pin 9 is reserved for 5V 1A max power out and is defaulted to **off**.

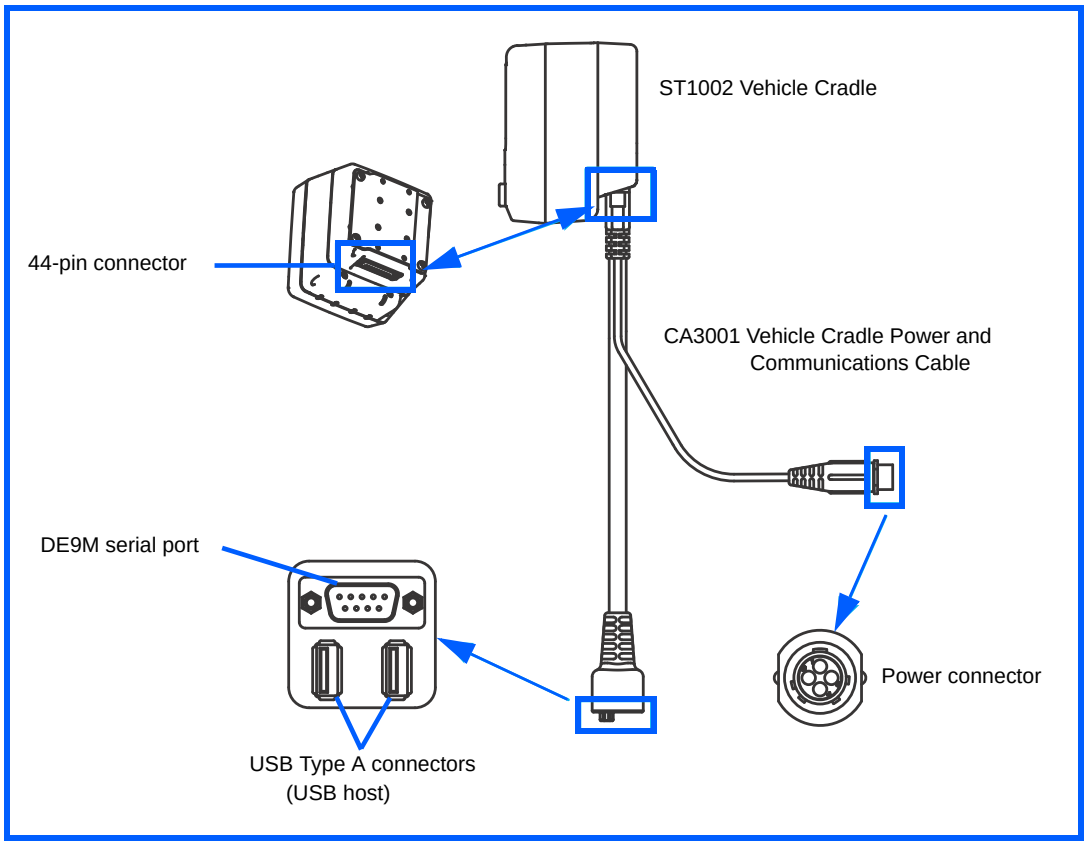


The following are the pin assignments of the interfaces.

ST4001				ST4005	
USB Micro B Connector		USB Type A Connector		DE9M Serial Connector	
Pin #	Signal	Pin #	Signal	Pin #	Signal
1	VBus	1	VBus	1	DCD
2	D-	2	D-	2	RXD
3	D+	3	D+	3	TXD
4	ID	4	GROUND	4	DTR
5	GROUND	5	SHIELD	5	GROUND
		6	SHIELD	6	DSR
				7	RTS
				8	CTS
				9	5Vdc 1A power out

Cable Connectors for Vehicle Cradle Model ST1002

- The ST1002 Vehicle Cradle has a 44-pin connector that allows connection with either the CA3001 Vehicle Cradle Power and Communications Cable (DE9M serial port, 2 USB Host interfaces, and power cable) or the power-only CA3000 Vehicle Cradle Power Cable. For installation details, see “ST1002 Powered Cradle Installation” on page 4-22.



The following are the pin assignments of the interfaces.

DE9M Serial		USB Type A		Power	
Pin #	Signal	Pin #	Signal	Pin #	Signal
1	DCD	1	VBus	1	VIN (11.5 to 30Vdc)
2	RXD	2	D-	2	GND (not chassis ground)
3	TXD	3	D+	3	MOTION DETECT
4	DTR	4	DGROUND	4	MOTION DETECT RETURN (not ground)
5	GROUND				
6	DSR				
7	RTS				

DE9M Serial		USB Type A		Power	
Pin #	Signal	Pin #	Signal	Pin #	Signal
8	CTS				
9	5Vdc 1A power out				

Omnii Battery Contacts

Figure A-1 *Battery Contact Pinout*

Pin #	Signal Name	Description
1	BATT+	Positive lead of battery.
-		Plastic Rip - provides mechanical polarity.
2	BATT+	Positive lead of battery.
3	BATT-CLK	SMBus data clock.
4	BATT-ID	Connected to GND in the battery.
5	BATT-DATA	SMBus bi-directional data line.
6	GND	Negative lead of battery.
7	GND	Negative lead of battery.

APPENDIX B IMAGER & CAMERA SETTINGS

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Introduction

The *Imagers* applet is used to create, modify, delete, and activate imager settings. The principal uses of the application are to decode barcodes and to capture images. This imager services application is used for cameras and imagers to configure linear (1D), stacked linear, matrix (true 2D) and postal barcodes.
A *Demonstration Application* is provided to demonstrate how the imager works. Refer to "Demo" on page 2-23 for details.

Required Applets

In order to configure imaging, the *Manage Triggers* applet must be present in the Control Panel, along with the *Imagers* applet.

NOTE The Imagers icon is only displayed when the appropriate imager is installed in your Omnii. If there is an imager installed but this icon is not present, additional software (ICS) may need to be installed.

To enable a newly-installed imager, press and hold down the ***[FN]*** key and the ***[Enter/Power]*** key simultaneously for a minimum of three seconds.

Presets

There are two methods that can be used to configure an imager using the *Imagers* applet:

- Use a predefined preset.
- Create a custom preset based on a predefined preset.

IMPORTANT It is strongly recommended that a predefined preset is used whenever possible. Each predefined preset contains a coherent group of settings that are known to work together in the intended environment. In almost all situations, at least one of the predefined presets results in a satisfactory outcome.

A *preset* is a group of exposure and image correction settings. Each preset configures the imager for a specific purpose such as barcode decoding or image capture.

Presets also allow easier and faster configuration of the imager after power-on or resume from suspend.

The predefined presets are generic and satisfy most user requirements. A custom preset can be created for a specific user application, such as: include only specified barcodes, read only a specified number of barcodes or for reading unusual media.

Every preset belongs to a preset type. The following preset types are available:

- Imaging for photo capture.
- Imaging for barcode decoding.
- Symbology selection.

At any time, only one preset of each type can be designated as the user-selected *active* preset.

Predefined Presets

Predefined presets are built into the imaging software and cannot be changed. The predefined presets allow you to use the imager to perform specified tasks without having to understand and set numerous variables. In almost all cases these predefined presets are sufficient.

Barcode Predefined Presets (Barcoding Menu)

These presets encompass the majority of the most popular barcodes and their subtypes. The *barcode decoding symbology* predefined presets define which barcodes can be decoded. The *barcode decoding camera* predefined presets determine how the barcode images are captured.

Barcode Decoding Symbology Predefined Presets

The following presets select groups of similar barcodes for decoding.

NOTE It is recommended that the default preset be used whenever possible.

My Default

This preset uses the *Symbology Settings* menu to define the preset. For details about the *Symbology Settings* menu, refer to "Barcoding Menu – Configuring Symbologies" on page B-14.

Factory Default

This preset enables the decoding of frequently used barcodes.

All

This preset enables the decoding of all barcodes that the imager can decode.

Linear

This preset enables the decoding of all the 1D symbologies that the imager can decode.

Linear and PDF417

This preset enables the decoding of all the 1D and PDF symbologies that the imager can decode.

Matrix

This preset enables the decoding of all 2D symbologies that the imager can decode.

Postal

This preset enables the decoding of all the postal symbologies that the imager can decode.

Barcode Decoding Camera Predefined Presets

The following presets enable successful barcode image capture in almost all conditions.

NOTE It is recommended that the default preset be used whenever possible.

Default

This preset works in a wide range of conditions. It is optimized for a normal office lighting (about 300 Lux).

Low Light

This preset is designed for very dark conditions such as inside a warehouse where the lights are kept low, or inside an unlit truck. This preset increases either the exposure time or the gain.

Low Power

This preset minimizes the use of the flash so as to conserve the battery power on the hand-held.

Glossy Surface

This preset minimizes the use of the flash so as to reduce reflection. This preset is used to read barcodes that are behind glass, or inside the plastic window of an envelope.

Image Capture Predefined Presets (Imaging Menu)

The following presets enable successful image capture in almost all conditions.

NOTE It is recommended that the default preset be used whenever possible.

Default

This preset works in a wide range of conditions. It is optimized for a normal office lighting (about 300 Lux).

Motion

This preset uses a shorter exposure time so as to freeze motion.

Low Light Near

This preset is designed for dark conditions, it uses a longer exposure time and includes the flash.

Using the Imagers Applet

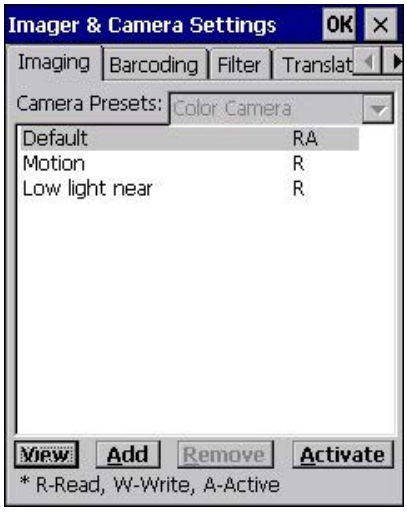
Configuring the Image Capture Presets (Imaging Menu)

To configure the image capture presets, open the dialog box as follows:

- Tap on **Start>Settings>Control Panel**.
- Tap on the **Imagers** icon, and if it's not already selected, tap on the **Imaging** tab.

The following screen is displayed.

Figure B-2 *Imaging Menu*



This window lists all the presets, both predefined and custom. Presets are identified as follows:

- Predefined presets are marked as *R read-only*.
- Custom presets are marked as *RW read and write*.
- One preset — either predefined or custom — is marked as *A active*.

Selecting a Camera

To select a camera:

- Tap on the **Camera Presets** drop-down menu to view the camera options.
- Choose a **camera** — specifically, *Front Imager* which is located at the top of the unit.

Setting the Active Preset

An active preset has an *A* to the right. To set an active preset:

- Highlight the preset, and tap on the **Activate** button.

Viewing a Preset

To view the parameter settings in a preset:

- Highlight a preset, and double-tap on the **View** button.

The associated preset window is displayed.

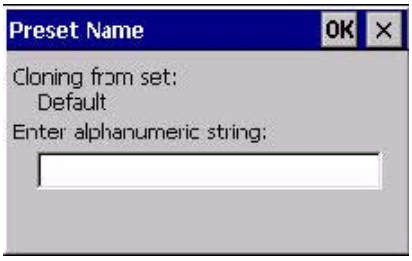
- Tap on the + sign to expand the lists so that you can view the parameter settings.

Creating a Custom Preset

A new custom preset is created by modifying a preset — either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the **Add** button.

A screen like the sample below is displayed.



- Type the **name** of the new preset in the dialog box.
- Tap on **OK** to save your changes.

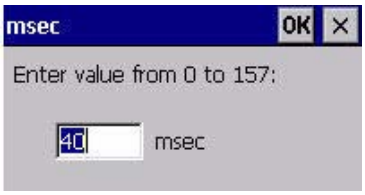
The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

- Highlight the custom preset, and double-tap on the **Edit** button.

- Tap on the **+** symbols to expand the lists so that you can view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a *range* of values:
  - Highlight the parameter, and then press the **[SPACE]** key or double-click on the parameter.
  - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.



  - Type a value in the field provided.
- For a parameter that toggles between two values such as *on* or *off* and *enabled* or *disabled*:
  - Highlight the parameter and then press the **[SPACE]** key, or double-click on the parameter. Either method toggles between the two available values.
- When you've completed your edits, tap on **OK**.

The parameter list is displayed; the new value for the changed parameter is shown.

- Tap on **OK** to exit to the preset list and save the changes.

Removing a Custom Preset

- Highlight the custom preset you want to delete, and tap on the **Remove** button.

A window is displayed warning you that you are about to remove a preset.

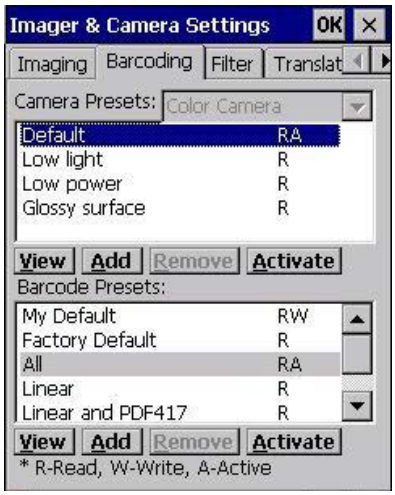
- Tap on **Yes** to remove the preset or **No** to cancel the operation.

Configuring the Barcode Decoding Camera Presets (Barcoding Menu)

To configure the barcode decoding camera presets:

- Tap on **Start>Settings>Control Panel>Imagers**.
- Tap on the **Barcoding** tab.

Figure B-3 *Camera Presets*



NOTE The top portion of the window displays the barcode decoding camera presets.

This window lists all the presets, both predefined and the custom. Presets are identified as follows:

- Predefined presets are marked as read-only. For a description, review "Predefined Presets" on page B-4.
- Predefined presets are marked as *R read-only*.
- Custom presets are marked as *RW read and write*.
- One preset — either predefined or custom — is marked as *A active*.

Selecting a Camera

To select a camera:

- Tap on the **Camera Presets** drop-down menu to view the camera options.
- Choose a **camera** — specifically, *Front Imager* which is located at the top of the unit.

Setting the Active Preset

An active preset has an *A* to the right; in Figure B-4 Viewing Barcode Decoding Symbologies on page B-12, the active preset is *Default*. To set an active preset:

- Highlight the preset, and tap on the **Activate** button.

Viewing a Preset

To view the parameter settings in a preset:

- Highlight a preset, and double-tap on the **View** button.

The associated preset window is displayed.

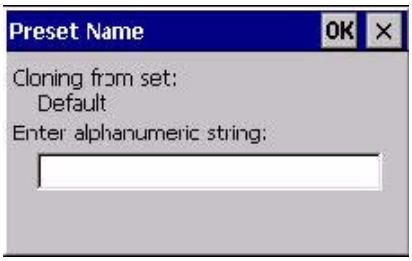
- Tap on the **+** sign to expand one of the lists so that you can view the parameter settings.

Creating a Custom Preset

A new custom preset is created by modifying a preset — either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the **Add** button.

A screen like the sample following is displayed.



- Type the **name** of the new preset in the dialog box.
- Tap on **OK** to save your changes.

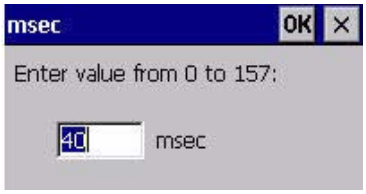
The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

- Highlight the custom preset, and double-tap on the **Edit** button.

- Tap on the **+** symbols to expand the lists and view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a *range* of values:
  - Highlight the parameter, and then press the **[SPACE]** key or double-click the parameter.
  - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.



  - Type a value in the field provided.
- For a parameter that toggles between two values such as *on* or *off* and *enabled* or *disabled*:
  - Highlight the parameter and then press the **[SPACE]** key, or double-click on the parameter. Either method toggles between the two available values.
- When you've completed your edits, tap on **OK**.

The parameter list is displayed; the new value for the changed parameter is shown.

- Tap on **OK** to exit to the preset list and save the changes.

Removing a Custom Preset

- Highlight the custom preset you want to delete, and tap on the **Remove** button.

A window is displayed warning you that you are about to remove a preset.

- Tap on **Yes** to remove the preset or **No** to cancel the operation.

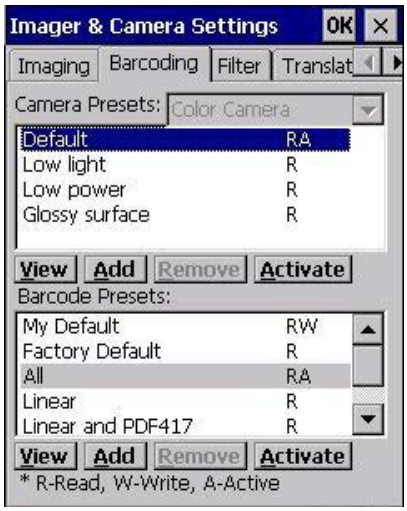
Configuring the Barcode Decoding Symbologies (Barcoding Menu)

To configure the barcode decoding camera presets:

- Tap on **Start>Settings>Control Panel>Imagers**.

- Tap on the **Barcoding** tab.

Figure B-4 *Viewing Barcode Decoding Symbologies*



NOTE The bottom portion of the window displays the barcode decoding barcode presets.

Setting the Active Preset

An active preset has an *A* to the right; in Figure B-4 Viewing Barcode Decoding Symbologies on page B-12, the active preset is *Default*. To set an active preset:

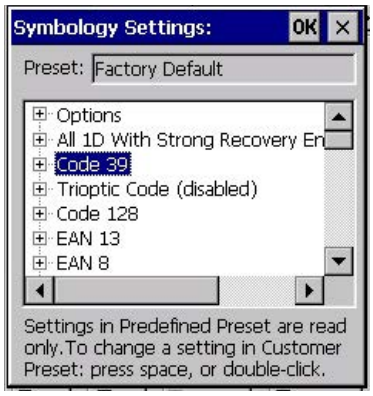
- Highlight the preset, and tap on the **Activate** button.

Viewing a Preset

To view the parameter settings in a preset:

- Highlight a preset, and double-tap on the **View** button.

The associated preset window is displayed.



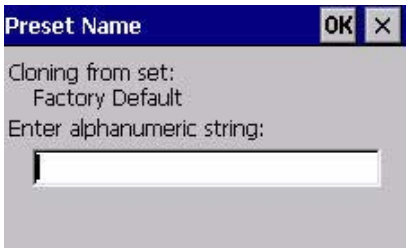
- Tap on the + sign to expand one of the lists so that you can view the parameter settings.

Creating a Custom Preset

A new custom preset is created by modifying a preset — either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the **Add** button.

A screen like the sample following is displayed.



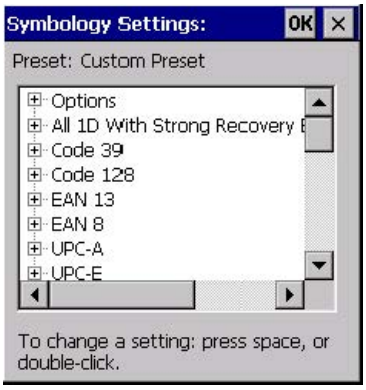
- Type the **name** of the new preset in the dialog box.
- Tap on **OK** to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

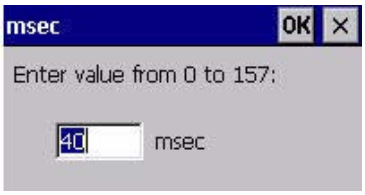
Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

- Highlight the custom preset, and double-tap on the **Edit** button.



- Tap on the **+** symbols to expand the lists and view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a *range* of values:
  - Highlight the parameter, and then press the **[SPACE]** key or double-click the parameter.
  - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.



  - Type a value in the field provided.
- For a parameter that toggles between two values such as *on* or *off* and *enabled* or *disabled*:
  - Highlight the parameter and then press the **[SPACE]** key, or double-click on the parameter. Either method toggles between the two available values.
- When you've completed your edits, tap on **OK**.

The parameter list is displayed; the new value for the changed parameter is shown.

- Tap on **OK** to exit to the preset list and save the changes.

Removing a Custom Preset

- Highlight the custom preset you want to delete, and tap on the **Remove** button.

A window is displayed warning you that you are about to remove a preset.

- Tap on **Yes** to remove the preset or **No** to cancel the operation.

Barcoding Menu – Configuring Symbologies

To view the *Symbology Settings* options:

- Tap on the **Barcoding** tab, highlight **All** and then double-tap the **View** button.

To edit a default preset, you must first *activate* it:

- Tap on **My Default**, and tap on the **Activate** button – an *A* appears to the right of *My Default*.

Once the preset is activated, you can enable or disable the barcodes the imager will read.

- Highlight **My Default** in the *Barcoding* tab.
- Double-tap on the **Edit** button.

None of the other barcode decoding predefined presets are changed.

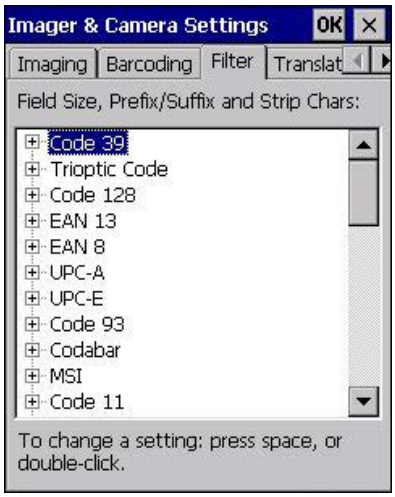
Symbology Settings

NOTE For descriptions of the barcode symbologies, review "Barcode Symbologies" on page B-18.

Filter Menu – Manipulating Barcode Data

To configure rules for manipulating barcode data:

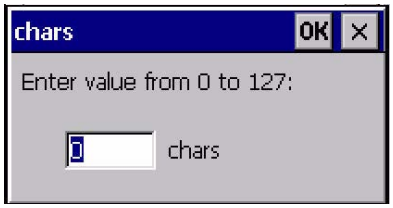
- Tap on **Start>Settings>Control Panel**.
- Tap on the **Imagers** icon, and then tap on the **Filter** tab.



Modifying a Barcode Setting

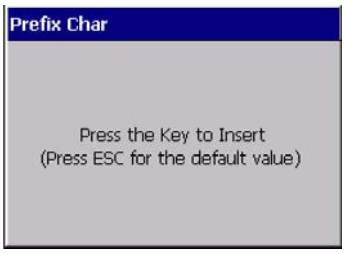
The rules for manipulating data from selected barcode symbologies can be modified. To change the settings for a symbology:

- Tap on the **+** symbols to expand the lists and view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a *range* of values:
  - Highlight the parameter, and then press the **[SPACE]** key or double-click the parameter.
  - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.



- Type a value in the field provided.

- For a parameter that takes a single character:
  - Highlight the parameter and then press the **[SPACE]** key, or double-click the parameter. The following screen is displayed:



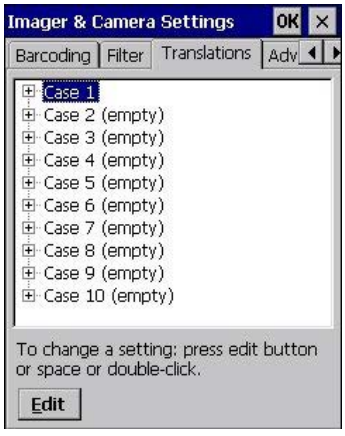
- When you've completed your edits, tap on **OK**.

Translation Menu – Configuring Rules

Translation rules enable the automatic processing of barcode data. Up to 10 cases can be defined, each consisting of up to 10 sequential rules.

NOTE Changes made to the translations configuration using the Scanner Control Panel program are synchronized with changes made here. Changes made in either place affect both translation tables.

- Tap on **Start>Settings>Control Panel**.
- Tap on the **Imagers** icon, and then tap on the **Translations** tab.



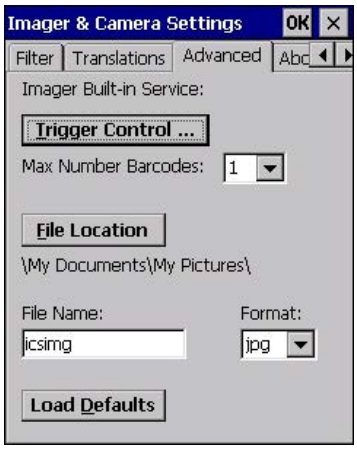
For instructions on adding, editing, and removing translation rules, refer to "Translations" on page 3-59.

Advanced Menu

File Locations for Captured Images

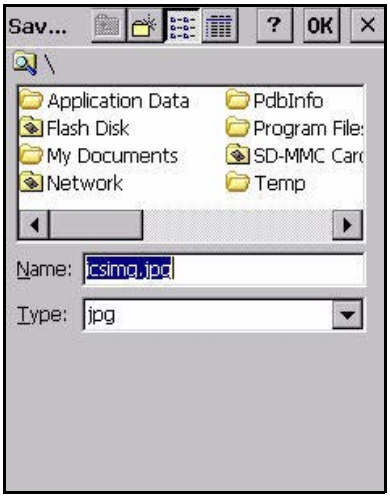
To configure the location for saved images, open the dialog box as follows:

- Tap on **Start>Settings>Control Panel**.
- Tap on the **Imagers** icon, and then tap on the **Advanced** tab.



To define the location where imager files will be stored:

- Tap on the **File Location** button.



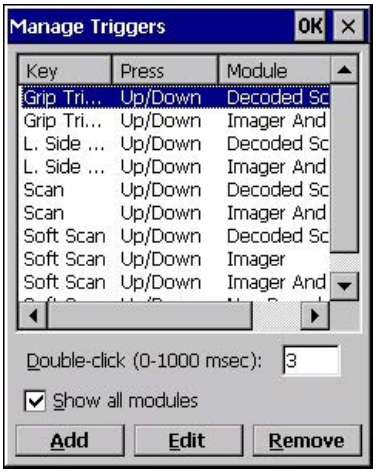
- Type the file **Name**, choose the **Folder** and file **Type**.
- Choose the **Location** in which your files will be saved.
- When you have completed all the changes, tap on the **Save** button.

Configuring Triggers

Viewing the Trigger Configuration

The trigger on the Omnii is configured using the *Manage Triggers* applet. The *Imagers* applet provides a shortcut to the *Manage Triggers* applet.

- In the *Advanced* tab, tap on the **Trigger Control** button.
- To view all the triggers and the hardware devices that are configured to use them, tap in the check box next to **Show all modules**.



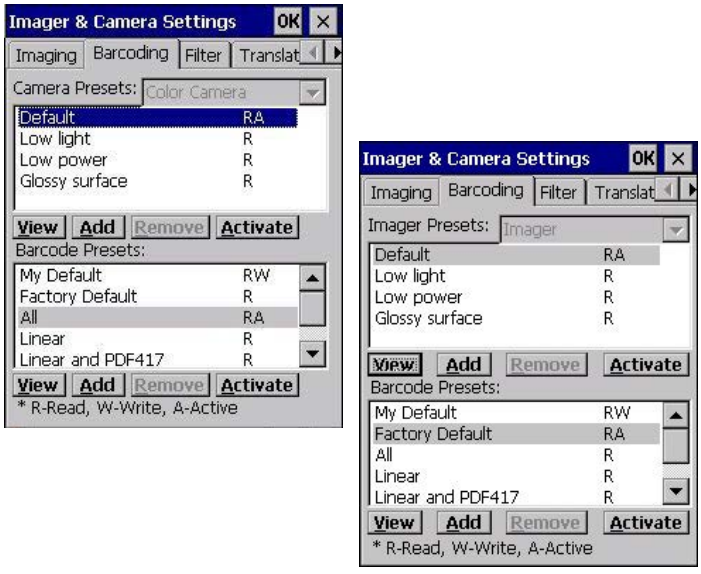
Adding, Editing and Removing Triggers

For instruction about adding, editing and removing triggers, refer to “Manage Triggers” on page 3-40.

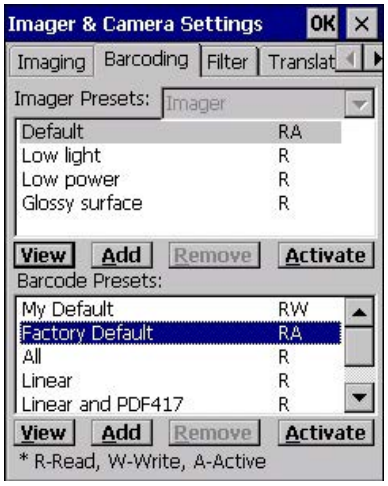
Barcode Symbologies

There are two sets of barcode symbologies, one for *Imager* and one for *Color Camera*. To display the barcodes available:

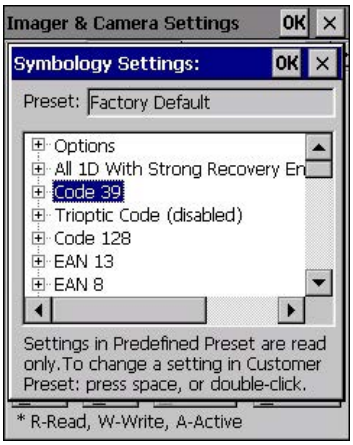
- In the *Imager & Camera Settings* screen, go to the **Barcoding** tab.
- In the *Camera Presets:* drop-down menu at the top of the *Imager & Camera Settings* screen, choose ***Imager*** or **Color Camera** depending on which set of barcodes you want to work with.



- Go to the **Barcode Presets**.



- Tap on an **Barcode Preset** to display the barcode symbologies.



Imager Barcode Symbologies

The barcode symbologies for the *Imager* are listed in this section.

Imager Barcode Symbologies
All 1D With Strong Recovery Enabled
Code 39
Code 128
EAN 13
EAN 8
UPC-E
UPC-A
UPC/EAN Sharing Settings
Code 93 (disabled)

Imager Barcode Symbologies
MSI Plessey (disabled)
Code 11 (disabled)
Interleaved 2 of 5 (disabled)
Matrix 2 of 5 (disabled)
Discrete 2 f 5 (disabled)
Telepen (disabled)
Gs1 DataBar (disabled)
TLC-39 (disabled)
2D PDF-417
2D micro PDF-417
CodaBlock F (disabled)
CodaBlock A (disabled)
2D Data Matrix
2D QR Code
2D Maxicode (disabled)
2D Aztec (disabled)
Postal: PlanNET (disabled)
Postal: PostNET (disabled)
Postal: China (disabled)
Postal: Japanese (disabled)
Postal: Kix (disabled)
Postal: Royal (disabled)
Gs1

Color Camera Barcode Symbologies

The barcode symbologies for the *Color Camera* are listed in this section.

Color Camera Barcode Symbologies
All 1D With Strong Recovery Enabled
Code 39
Code 128
EAN 13
EAN 8
UPC-E
UPC-A
Code 93 (disabled)

Color Camera Barcode Symbologies
Codabar
Interleaved 2 of 5 (disabled)
Gs1 DataBar (disabled)
Gs1 Composite
2D PDF-417
2D micro PDF-417
2D Data Matrix
2D QR Code
2D Maxicode (disabled)
2D Aztec (disabled)
Postal: PlanNET (disabled)
Postal: PostNET (disabled)
Postal: Australia (disabled)
Postal: Canadian (disabled)
Postal: Japanese (disabled)
Postal: Kix (disabled)
Postal: Korean (disabled)
Postal: Royal (disabled)

APPENDIX C SCANNER SETTINGS

Barcode Settings C-3
Scanner Options C-3
Restoring Default Settings C-4
Decoded (Internal) Scanners C-5
Options C-5
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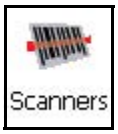
Decoded (ISCP) Advanced Options C-8
Non-Decoded Scanners C-10
Options C-11

Barcode Settings

The *Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor barcode scanner configurations and choose the barcodes your scanner will recognize.



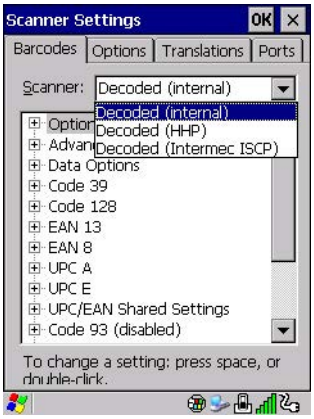
The parameters are preset with the default settings of the decoded scanner installed in the unit. For a listing of available scanners and their specifications, please refer to Appendix E: “Omnii Specifications”.

IMPORTANT To enable a newly-installed scanner, press and hold down the [FN] key and the [Power] key simultaneously for a minimum of three seconds.

For information on configuring the Options, Translations, and Ports settings, see “Scanners” on page 3-55.

Scanner Options

The drop-down menu to the right of the *Scanner* option allows you to choose configurations for one of the following scanner types, depending on what is installed in/on your hand-held: *Decoded (internal)*, *Decoded (HHP)*, *Decoded (Intermec ISCP, and Non-decoded Scanners*.



The symbologies listed change to reflect the scanner you choose and the barcodes it supports. Always defer to your barcode scanner programming manual when in doubt about the availability or settings for any parameter.

NOTE Your Omnii comes preconfigured from the factory for internal scanner types. The type of scanner installed can be determined from the ***System*** icon in the Control Panel, under the System Properties tab.

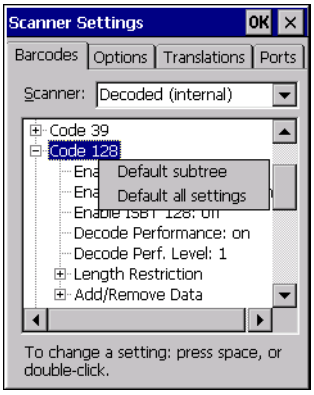
IMPORTANT To improve the decode speed and performance, enable (set to on) only those codes that are required by the application.

Keep in mind that some barcode types are only available when an internal imaging scanner is installed. All internal scanners can be configured using these dialog boxes.

Restoring Default Settings

If you want to restore the factory defaults after making changes, the defaults can be applied to a selected parameter, sub-tree of parameters, or all scanner parameters.

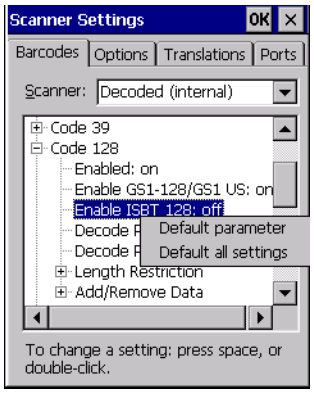
- Press and hold on a symbology (e.g., Code 128) to display a pop up a menu.



- Choose **Default subtree** to reset only the parameters in the symbology you selected, or choose **Default all settings** to reset all scanner parameters to default settings.

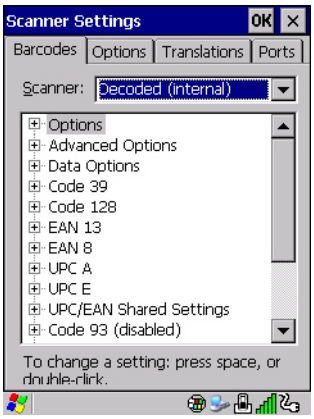
To reset a single parameter to its default setting:

- Press and hold on the parameter you want to reset.



- Choose **Default parameter** to reset the parameter to the default setting.

Decoded (Internal) Scanners



- Tap on the **Scanner** drop-down menu, and choose **Decoded (internal)**.

Options

NOTE Some options are available only for specific scanners. Refer to the option names in this section for scanner model identification.

Dot Time (msec)

The value selected for Dot Time (msec) determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of *0 msec*, *200 msec* or *400 msec*. A value of **0** (zero) disables the target dot.

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between *5* and *99.* The value is measured in tenths of seconds.

Decoded (Internal) Advanced Options

Scan Mode

You can set the method of scanning by setting this parameter to *Scan beam only*, *Aim with Scan: 1 trigger pull*, *Aim with Scan: 2 trigger pulls*, *Aim with Scan on trigger release*, and *Continuous Scan Mode*. Default is *Scan beam only*.

Aim Duration

This parameter determines the total time the aiming pattern appears before the scanner laser begins sweeping. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from *0* to *30* (0 to 3 sec.). A value of **0** (zero) disables the aiming-dot.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when you quickly trigger on/off.

Power Mode

This parameter is a power-saving option. Tapping on it displays a screen listing two power mode options: *Continuous Power* and *Low Power*.

In *Continuous Power* mode, the scanner is always on, waiting for a trigger pull or serial communication.

In *Low Power* mode, the scanner is in a suspend state, drawing minimal power until a trigger pull or serial communication wakes it. Keep in mind that while this option is more suitable for battery powered applications, there will be a slight delay while the scanner powers up to scan a barcode.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a barcode is scanned — a successful decode restores normal flashing.

This is only used if the unit's *Trigger Mode* has been changed to *Continuous On*. If the unit is used in a fixed mount this parameter might be used, but not if the unit is used as a hand-held.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec*., *1 min*., *2 min*. or *3 min*.

NOTE This parameter is only used if the Trigger Mode has been set to Continuous On and the Omnii is mounted in a fixed position; otherwise, *Low Power Timeout* is not used.

Parameter Scanning

Setting this parameter to **on** enables decoding of parameter barcodes.

Linear Security Level

This parameter allows you to select the security level appropriate for your barcode quality. There are four levels of decode security for linear code types (e.g., Code 39, Interleaved 2 of 5). Higher security levels should be selected for decreasing levels of barcode quality. As security levels increase, the scanner decode speed decreases.

Double-tapping on this parameter displays a dialog box in which you can enter a value from **1** to **4**.

*Linear security level **1*** specifies that the following code types must be successfully read twice before being decoded:

Code Type	Length
Codabar	All
MSI Plessey	4 or less
D 5 of 5	8 or less
I 2 of 5	8 or less

*Linear security level **2*** specifies that all types of codes must be successfully read twice before being decoded.

*Linear security level **3*** specifies that code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Code Type	Length
MSI Plessey	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

*Linear security level **4*** requires that all code types be successfully read three times before being decoded.

Bi-Direction Redundancy

NOTE This parameter is only valid if a “Linear Security Level” is enabled.

When this parameter is enabled, a barcode must be successfully scanned in both directions (forward and reverse) before being decoded.

Decoded (Internal) Data Options

Transmit Code ID Char

A code ID character identifies the scanned barcode type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a transmit code: *None*, *AIM* or *Symbol*.

Scan Data Format

This parameter allows you to change the scan data transmission format.

Double-tapping on **Scan Data Format** displays the following options from which you can choose a data format: *data (as-is), data [S1], data [S2], data [S1][S2], [P] data, [P] data [S1], [P] data [S2] and [P] data [S1][S2]*.

Prefix [P], Suffix [S1] and Suffix [S2]

A prefix and/or one or two suffixes may be appended to scan data for use in data editing. When you double-tap on these parameters, dialog boxes are displayed in which you can enter a value from **0** to **255**.

Delete Char Set ECIs

Setting this parameter to **on** enables the scanner to delete any escape sequences representing Character Set ECIs (Extended Channel Interpretations [also known as GLIs]) from its buffer before transmission.

When this parameter is enabled, the scanner transmits data from PDF417 and MicroPDF417 barcodes containing Character Set ECIs, even when the ECI Protocol is disabled.

ECI Decoder

Setting this parameter to **on** enables the scanner to interpret any Extended Channel Interpretations (ECIs) supported by the scanner. This parameter has no effect on symbols that were not encoded using ECIs.

If this parameter is set to **off** and a symbol that was encoded using an ECI escape is scanned, the scanner transmits the ECI escape followed by the uninterpreted data.

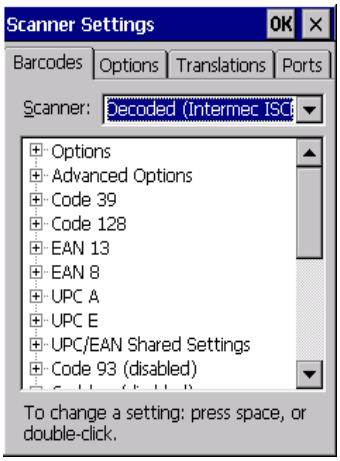
The barcode symbologies for the scanner are listed in table following table.

Decoded (Internal) Barcode Symbologies	
Code 39	UPC/EAN Shared Settings
Trioptic Code (disabled)	Code 93 (disabled)
Code 128	Codabar (disabled)
EAN 13	MSI Plessey (disabled)
EAN 8	Interleaved 2 of 5 (disabled)
UPC-A	Discrete 2 f 5 (disabled)
UPC-E	Gs1 DataBar (disabled)

Decoded (HHP)

To configure imagers, please see Appendix B: “Imager & Camera Settings”.

Decoded (Intermec ISCP)



- Tap on the **Scanner** drop-down menu, and choose **Decoded (Intermec ISCP).**

Decoded (ISCP) Options

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between **1** and **10** seconds.

Decoded (ISCP) Advanced Options

Continuous Scan Mode

Setting this parameter to **on** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when you quickly trigger on/off.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a barcode is scanned — a successful decode restores normal flashing.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec, 1 min, 2 min*, or *3 min*.

NOTE This parameter is only used if the Trigger Mode has been set to ***Continuous On*** and the unit is mounted in a fixed position; otherwise, *Low Power Timeout* is not used.

Parameter Scanning

Setting this parameter to **Enabled** allows decoding of parameter barcodes.

Same Read Validate

The data is only transmitted after repeated reads give the same result. The value assigned at this parameter determines the number of reads required, from *0* to *10* times.

Same Read Timeout

Prevents the same barcode from being read more than once. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

Diff Read Timeout

Prevents unwanted reading of other barcodes on the same label. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

Add AIM ID Prefix

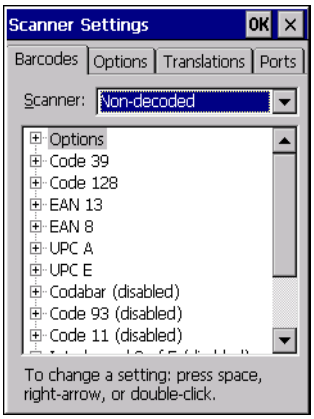
The *AIM ID* (Association for Automatic Identification and Mobility) is an international barcode identifier. When this parameter is enabled, the *AIM ID* is inserted at the beginning of the decoded barcode.

The barcode symbologies for the scanner are listed in the following table.

Decoded (Intermec ISCP) Barcode Symbologies	
Code 39	TLC-39 (disabled)
Code 128	2D PDF-417
EAN 13	2D micro PDF-417
EAN 8	Discrete 2 of 5 (disabled)
UPC-A	Telepen (disabled)
UPC-E	Gs1 DataBar (disabled)
UPC/EAN Shared Settings	Composite
Code 93 (disabled)	TLC-39 (disabled)
Codabar (disabled)	PDF-417
MSI Plessey (disabled)	micro PDF-417 (disabled)
Code 11 (disabled)	CodaBlock F (disabled)
Interleaved 2 of 5 (disabled)	CodaBlock A (disabled)
Matrix 2 of 5 (disabled)	

Non-Decoded Scanners

Figure C-5 *Non-Decoded Scanner Options*



- Tap on the **Scanner** drop-down menu, and choose *Non-decoded*.

All the available barcode symbologies for this type of scanner can be selected in this tab.

A plus sign (+) to the left of the menu item indicates that a sub-menu of parameters is attached.

- Tap on the **+** sign to display the sub-menu.
- To change a parameter value, double-tap on the parameter. If you need to type a value, a dialog box is displayed in which you can type a new value. If you need to change a *yes* or *no* value, double-tapping on the parameter toggles between *yes* and *no.*

If you're using the keyboard:

- Highlight the barcode you want to work with, and press the [RIGHT] arrow key to display the sub-menu.
- Use the [UP] and [DOWN] arrow keys to highlight a parameter.
- To change a parameter value, press [SPACE] or the [RIGHT] arrow key. If a field requires text entry, a text box is displayed in which you can enter the appropriate value.

Options

- Tap on the **+** sign next to *Options* to display these parameters.

Dot Time (msec)

The value selected for "Dot Time (msec)" determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from 0 to 3000. A value of *0*(zero) disables the target dot.

Short Code

When enabled, this parameter allows scanning of short I 2 of 5 barcodes (2 characters). When disabled, these short barcodes are rejected.

Enabling "Short Code" may reduce the robustness of the decoding since the hand-held must decode more potential barcodes; it is therefore not recommended for general-purpose barcodes with 4 or more characters.

Verify

The value entered for this parameter determines the number of correct additional decodes required after the initial decode, prior to a barcode being accepted. Higher values significantly increase the time it takes to decode a barcode but also improve the reliability of the decoded barcode.

Security

This parameter controls the tolerance for decoding edge-to-edge barcodes (Code 93, Code 128, UPC/EAN). Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the barcode. The default value of *30* is generally a good compromise setting.

The barcode symbologies for the scanner are listed in the following table.

Non-Decoded Barcode Symbologies	
Code 39	Code 93 (disabled)
Code 128	Code 11 (disabled)
EAN 13	Interleaved 2 of 5 (disabled)
EAN 8	MSI Plessey (disabled)
UPC-A	Discrete 2 of 5 (disabled)
UPC-E	IATA 2 of 5 (disabled)
Codabar (disabled)	

APPENDIX D INTERNAL IMAGER & SCANNER SPECIFICATIONS

SE955 Scanner D-3
SE955 Decode Zones D-3
SE965 Scanner D-4
SE965 Decode Zones D-5
SE1224HP - High Performance Scanner D-6
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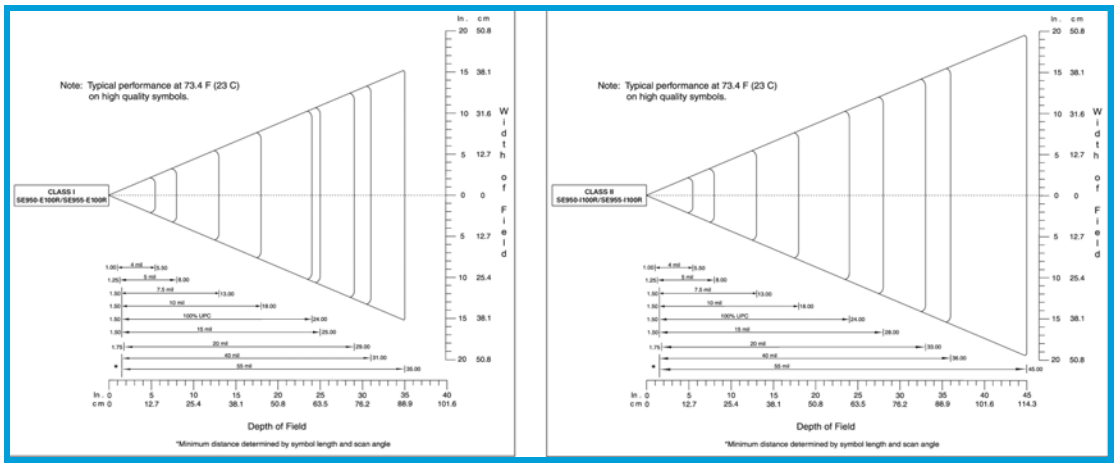
This appendix lists specifications for the following internal scanners. For a current list of model numbers and descriptions for the Omnii scanner pod and back cover kits, please contact your Psion representative or go to http://www.psion.com/us/products/handheld.htm.

SE955 Scanner

Parameter	SE955
Configuration	Decoded
Scan Rate	104 (± 12) scans/sec (bidirectional)
Scan Angle	47º± 3º default / 35º ± 3º reduced
Voltage	3.0-3.6 V± 10%; 5 V± 10%
Ambient Light:	10,000 ft. candles
Laser Safety	IEC 60825
Electrical Safety	UL 60950, EN/IEC 60950
EMI/RFI	FCC Part 15 Class B, EN 55024/CISPR 22, AS 3548, VCCI
Environmental	RoHS Compliant

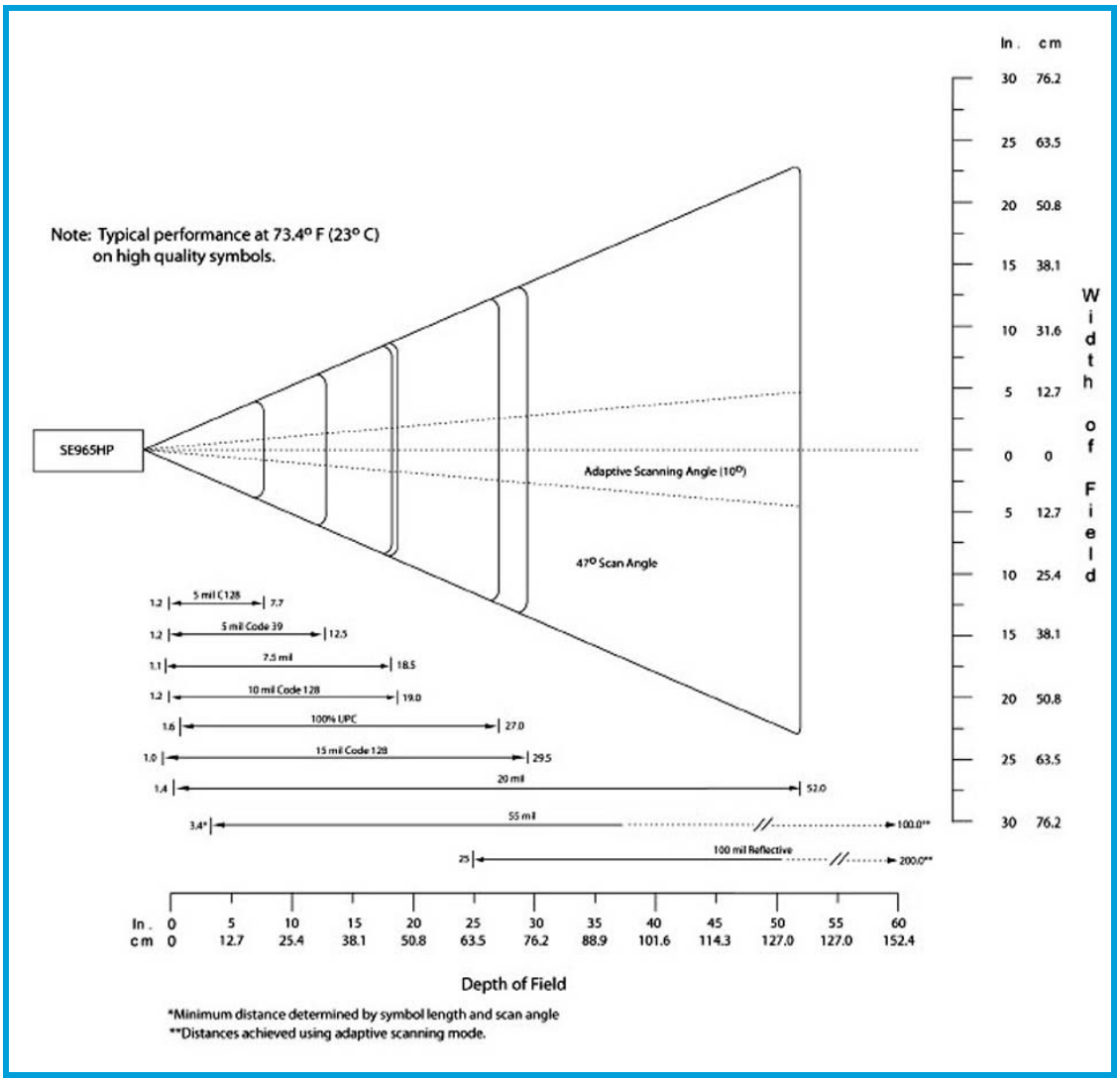
SE955 Decode Zones


Note: Typical performance at 73.4 F (23 C)
on high quality symbols.
CLASS I
SE950-E100R/SE955-E100R
Width of Field
Depth of Field
*Minimum distance determined by symbol length and scan angle
Note: Typical performance at 73.4 F (23 C)
on high quality symbols.
CLASS II
SE950-I100R/SE955-I100R
Width of Field
Depth of Field
*Minimum distance determined by symbol length and scan angle

SE965 Scanner

Parameter	SE965
Dimensions	0.46 in. H x 0.85 in. W x 0.61 in. D 11.75 mm H x 21.6 mm W x 15.5 mm D
Weight	0.27 oz./7.6 g
Configuration	Decoded
Interface	SSI Control over TTL Serial on a 12-pin ZIF connector
Scan Angle	Wide (default): 47 ° (typical) Medium: 35° (typical) Narrow: 10° (typical) Note: The SE965 scan engine does not require margin on either side of the barcode to decode. The 47° scan line provides identical scanning performance to older scan engines with a scan line of 53°.
Skew Tolerance	± 40° from normal
Pitch Tolerance	± 65° from normal
Roll Tolerance	± 35° from vertical
Specular Dead Zone	± 8°
Optical Resolution	0.005 in. minimum element width
Scan Repetition Rate	104 (± 12) scans/sec (bidirectional)
Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm
Ambient Lighting Tolerance	Tolerant to typical artificial indoor and natural outdoor (direct sunlight) lighting conditions. Fluorescent, Incandescent, Mercury Vapor, Sodium Vapor, LED[5]. 450 Ft Candles (4,844 Lux) Sunlight 8000 Ft Candles (86,111 Lux)
Operating Temperature	-22° F to 140° F/ -30° C to 60° C
Storage Temperature	-40° F to 158° F/ -40° C to 70° C

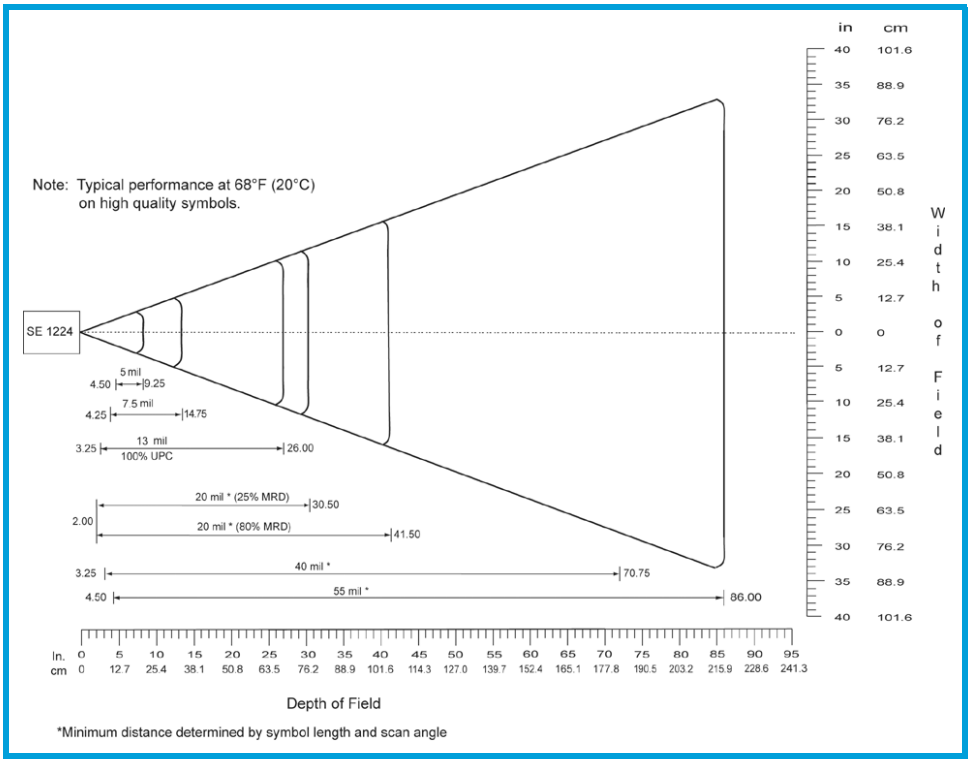
SE965 Decode Zones



SE1224HP - High Performance Scanner

Parameter	SE1224HP
Type	Laser Class 2
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (± 5) scans/sec (bi-directional)
Scan Angle/Field of View	42º (typical), 30º (narrow)
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm.
Symbologies	UPC/EAN, Code 128, UCC/EAN 128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light	Artificial: 450 ft. candles (4844 Lux). Sunlight: 8000 ft. candles (86112 Lux).
Laser Output Power (peak)	1.35 mW

SE1224HP Decode Zones

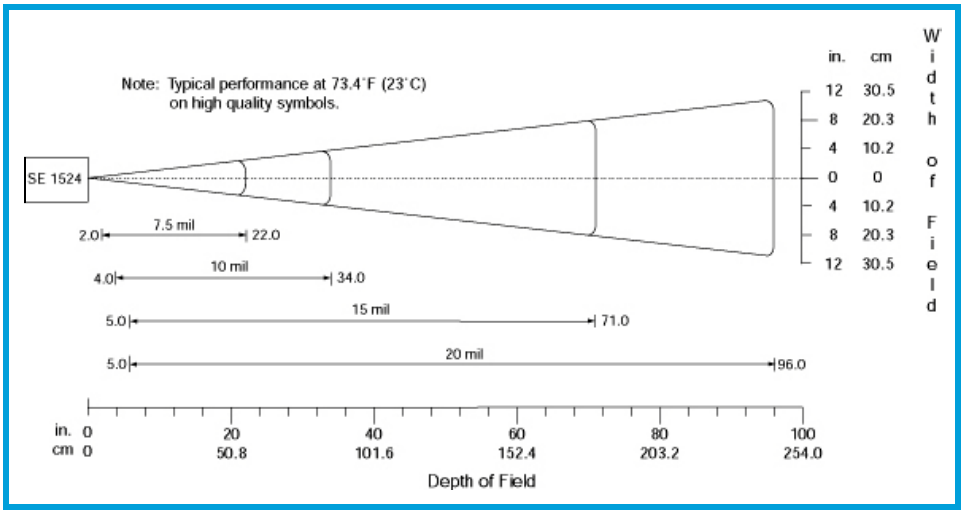


SE1524ER – Extended Range Scanner

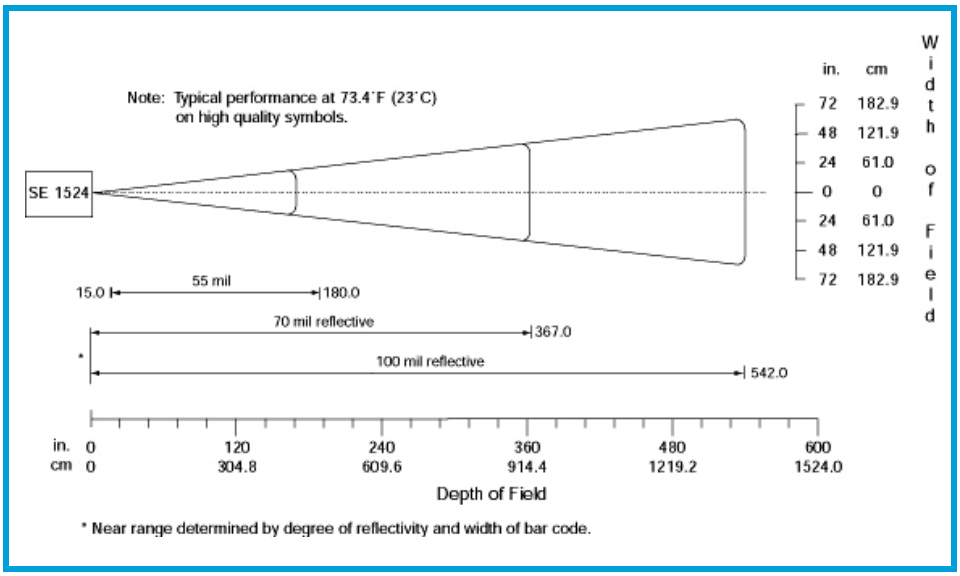
Parameter	Specification
Type	Laser Class 2
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (±5) scans/sec (bi-directional).
Scan Angle/Field of View	13.5° ±0.7°
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm.
Symbologies	UPC/EAN, Code 128, UCC.EAN128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light	Artificial: 450 ft. candles (4,844 Lux) Sunlight: 4,000 ft. candles (86,112 Lux).
Laser Output Power (peak)	1.26 mW

SE1524ER Decode Zones

SE1524ER Decode Zone A (Short Range, Small Codes)



SE1524ER Decode Zone B (Long Range, Large Codes)



EV15 Imager

Parameter	Specification
Light Source	617 nm highly visible LED
Scan Angle	40º
Minimum Print Contrast	Minimum 25%
Minimum X. Dimension	0.1 mm (4 mils)
Reading Distance	Up to 90 cm (35 in)
Symbologies	UPC (E&A), EAN, RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved, Matrix, Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, PDF417, Micro PDF417
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux

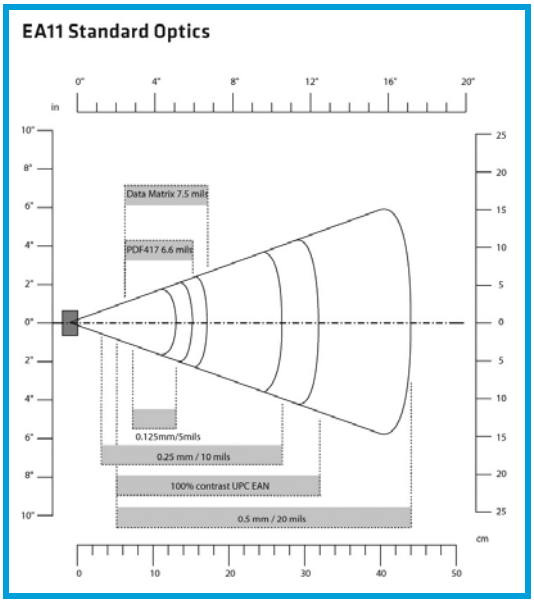
EV15 Imager Decode Zone

0 Lux to 100,000 Lux		
Mil Size	Minimum Range Inches	Maximum Range Inches
5	2.5	7
10	3	14
UPC	2	14.5
20	2.5	22
40	3	35.5
High quality symbols in normal room light.		

EA11 Decoded 2D Imager

Parameter	Specification
Scan Rate	2D mode: 56 images/s auto adaptive
Linear Emulation Mode	200 scans/s auto adaptive
Scan Angle	38.9° (horizontal), 25.4° (vertical)
Optical Resolution	752 (H) x 480 (V) pixels, 256 gray levels
Print Contrast	down to 25%
Versions	Standard range
Symbologies - 1D Symbologies - 2D	EAN/UPC, GS1 Databar (limited expanded & omni-directional), RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Inter-leaved/Matrix/ Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, postal codes (Australian Post, BPO, Canada Post, Dutch Post, Japan Post, PostNet, Sweden Post) Data Matrix, PDF417, Micro PDF 417, Codablock Maxicode, QR, Aztec GS1 composite codes
Voltage (optics)	3.3V -5% / +10% (typical values)
Operating Current	170mA - 310mA (lighting condition dependent)
Power Saving Mode	2mA
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux
Regulatory Approvals	UL, VDE certified, RoHS compliant

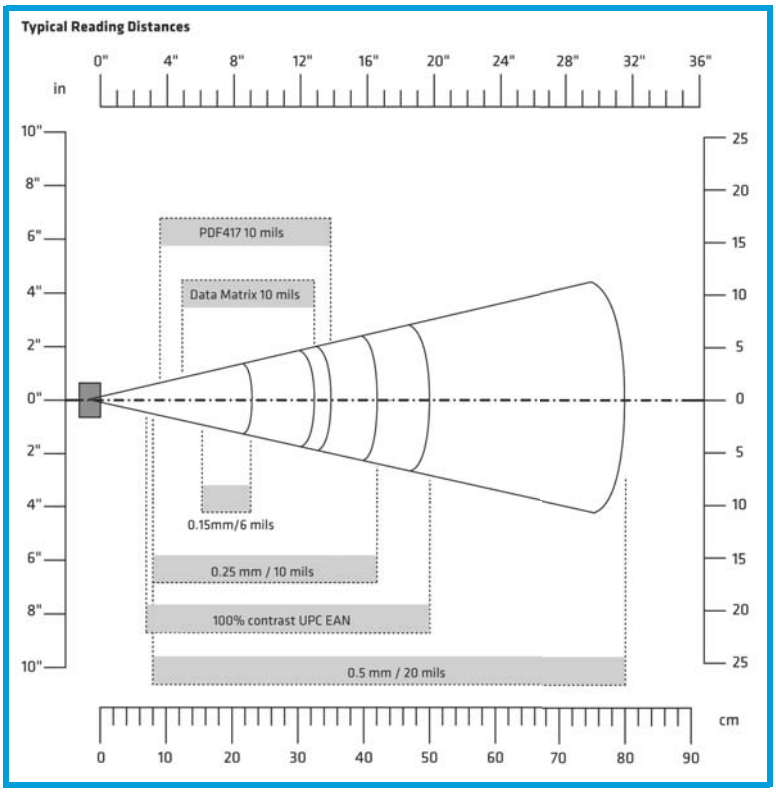
EA11 Typical Reading Distances



EA20X Imager

Parameter	Specification
Light Source	617nm highly visible LED, 650nm laser framing/aiming
Scan Rate	2D mode: 60 images/s auto adaptive
Linear Emulation Mode	200 scans/s auto adaptive
Scan Angle	26.0° (horizontal), 16.8° (vertical)
Framing Angles	25.0° (horizontal), 16.0° (vertical)
Optical Resolution	752 (H) x 480 (V) pixels, 256 gray levels
Print Contrast	down to 30% on 1D, 35% on 2D
Minimum Resolution	1D symbologies 0.15 mm (6 mil), Stacked (PDF417) 0.17 (6.6 mil) and 2D matrix 0.18 (7mil)
Symbologies - 1D Symbologies - 2D	EAN/UPC, GS1 Databar (limited expanded & omni-directional), RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved/Matrix/ Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, postal codes (Australian Post, BPO, Canada Post, Dutch Post, Japan Post, PostNet, Sweden Post) Data Matrix, PDF417, Micro PDF 417, Codablock Maxicode, QR, Aztec GS1 composite codes
Voltage	3.3V± 5%
Operating Current	410mA @ 3.3V scanning with power save
Power Saving Mode	7mA
Ambient Light	From 0 to 100,000 lux
Regulatory Approvals	UL, cUL, VDE certified, RoHS compliant, Class 2 Laser

EA20X Typical Reading Distances



HHP 5080SR Imager/Decoder

Parameter	Specification
Focal Point - SR	7 inches (17.8 cm) from lens plate
Image Sensor	752 x 480 CMOS sensor
Motion Tolerance	4 inches per second
Rotational Sensitivity	360°
Viewing Angle	±40°
Ambient Light	Total darkness to 100,000 lux (full sunlight)
Illumination LEDs	626 nm ± 30 nm
Aiming	LEDs: 526 nm ± 30 nm Laser: 650 nm ± 10 nm
Input Voltage - Imager Input Voltage - HHP 5080	3.3 VDC ± 5% (23°C) 3.0 VDC to 5.5 VDC (23°C)

Parameter	Specification
Current Draw - Imager	Max. Operating Current: 100 mA; Standby Current: 100 µA
Current Draw - HHP 5080	Average Current (Interlaced Mode): 510 mA; Standby Current: 120 µA; Peak: 600 mA
Symbologies: 2 Dimensional	PDF417, MicroPDF417, MaxiCode, Data Matrix, QR Code, Aztec, Aztec Mesa, Code 49, UCC Composite
Linear	Code 39, Code 128, Codabar, UPC, EAN, Interleaved 2 of 5, Reduced Space Symbology, Code 93, Codablock
Postal	Postnet (US), Planet Code, BPO 4 State, Canadian Post, Japanese Post, KIX (Netherlands) Post

HHP 5080SR Working Range

Data is characterized at 23°C (73.4°F) and 0 lux ambient light.

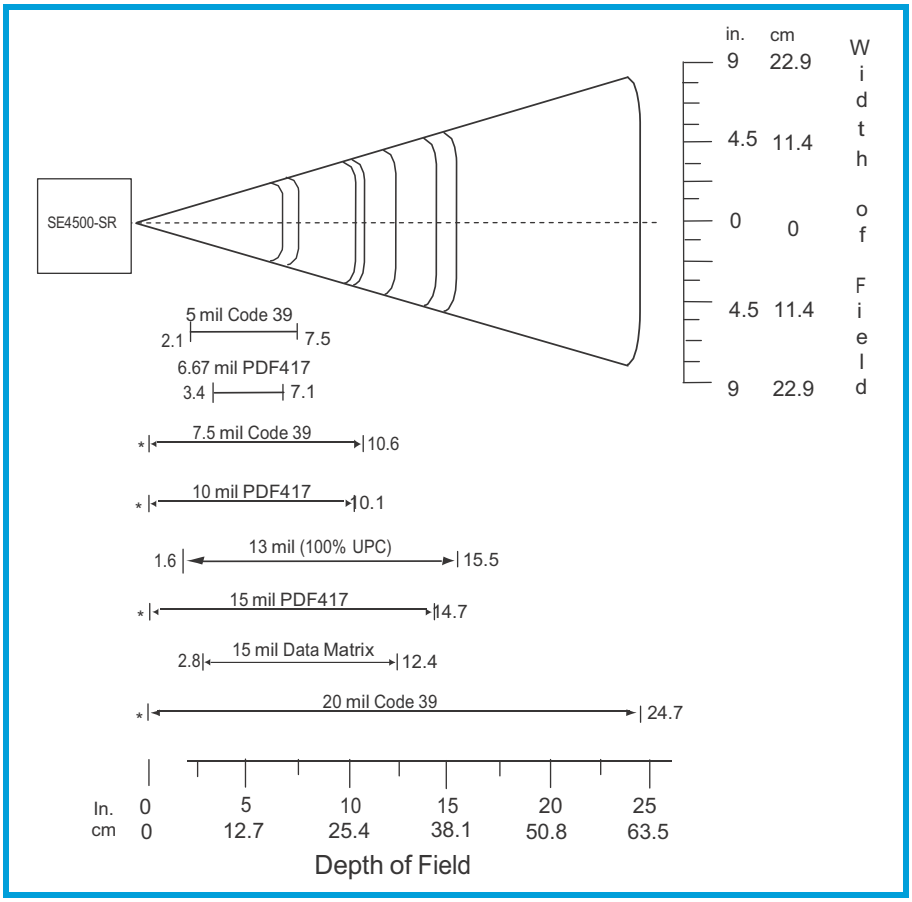
Symbology	Size (mil)	Near	Far
Linear	8.3 (.020cm)	3.5 in. (8.9cm)	7.6 in. (19.3cm)
PDF417	10 (.025cm)	3.1 in. (7.9cm)	9 in. (22.9cm)
UPC	13 (.033cm)	2.1 in. (5.3cm)	13.2 in. (33.5cm)
Data Matrix	15 (.038cm)	2.3 in. (5.8cm)	10.2 in. (25.9cm)
QR	15 (.038cm)	3.1 in. (7.9cm)	8.8 in. (22.4cm)
MaxiCode	35 (.089cm)	2.0 in. (5.1cm)	13.0 in. (33cm)

SE4500SR – Standard Range Imager

Parameter	Specification
Power Requirements - Input Voltage	3.3 V ± 0.3 V at 23° C
Operating Mode Supply Currents (3.3VDC at 23° C):	
Low Power	500 µA
Idle	18 mA
Image Acquisition	80 mA
Illumination Enabled	200 mA
Maximum Operating Current	250 mA (aiming on during exposure, illumination enabled)
Maximum Sensor Power Supply Noise* (at 23° C)	100 mVp-p (3.3 V, 10 Hz - 100 kHz) for decoding 30 mVp-p (3.3 V, 10 Hz - 100 kHz) for image capture
Optical Resolution	5.0 mil (Code 39), 6.7 mil (PDF417)
Specular Dead Zone:	
Illumination On	Up to 20º depending on target distance and substrate glossiness
Illumination Off	None
Skew Tolerance	± 60º
Pitch Angle	± 60º
Roll	360º
Ambient Light Immunity (Sunlight)	9000 ft. candles (96,900 lux)
Imaging Sensor:	
Image Resolution	752 H x 480 V pixels (Wide VGA)
Grey Scale	256 levels (8 bits per pixel)
Field of View (FOV)	SE4500-SR: 39.6º horizontal, 25.7º vertical
Focusing Distance from Front of Engine (SR)	8 in. / 20.3 cm
Aiming Element:	
Visible Laser Diode (VLD)	655 ± 10 nm
Central Dot Optical Power	0.6 mW (typical)
Pattern Angle	40º horizontal, 30º vertical
Illumination System:	
LEDs	625 ± 5 nm (dominant wavelength)
Pattern Angle	60º x 40º at 80% center intensity

Parameter	Specification
Shock	2000 G ± 5% applied via any mounting surface at -30º and 55º C for a period of 0.85 ± 0.05 msec 2500 G ± 5% applied via any mounting surface at 23º C for a period of 0.85 ± 0.05 msec
Vibration	Unpowered SE4500 withstands a random vibration along each of the X, Y, and Z axes for a period of one hour per axis (6 G rms), defined as follows: 20 to 80 Hz Ramp up at 0.04 G^2/Hz at 3 dB/octave 80 to 350 Hz 0.04 G^2/Hz 350 Hz to 2 kHzRamp down at 0.04 G^2/Hz at 3 dB/octave
ESD	± 2 kV @ connector
Laser Safety Class	CDRH / IEC Class 2
LED Class	IEC Class 1M
Maximum Engine Dimensions	11.8 mm H x 21.50 mm W x 16.3 mm D 0.46 in. H x 0.85 in.W x 0.64 in. D
Weight	8.0 grams (0.28 oz)
Electrical Interface	21 pin 0.3 mm pitch ZIF connector

SE4500SR Decode Zone

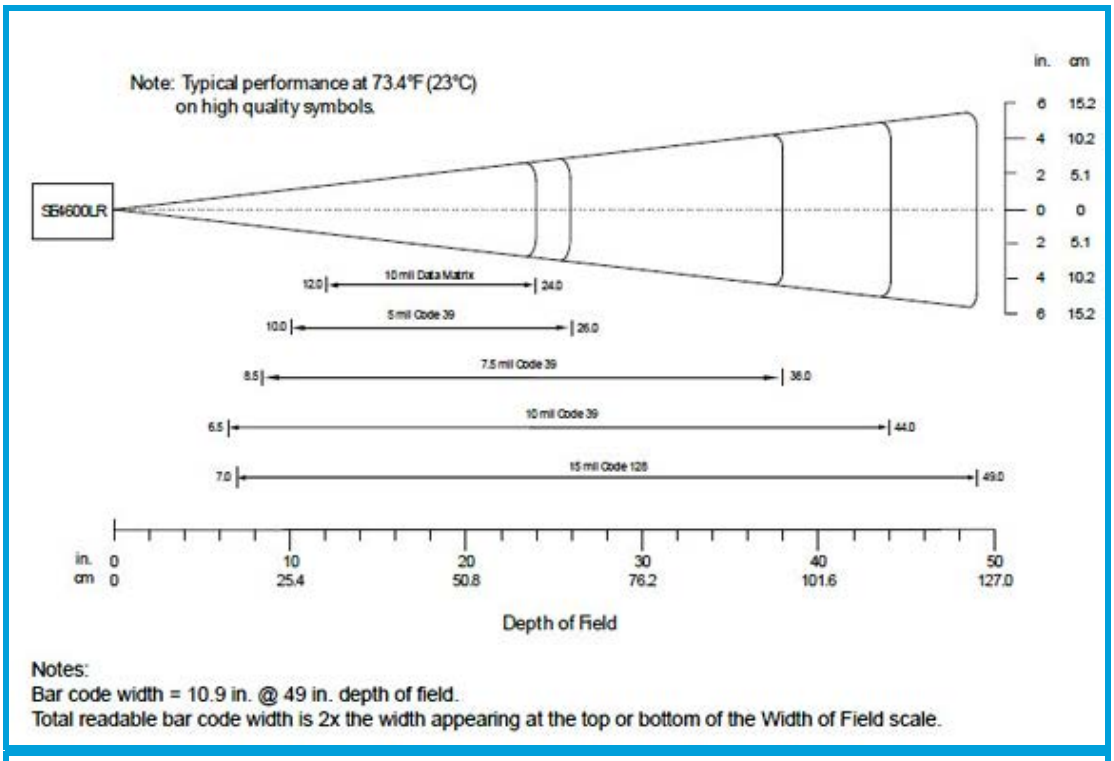


SE4600LR – Long Range Imager

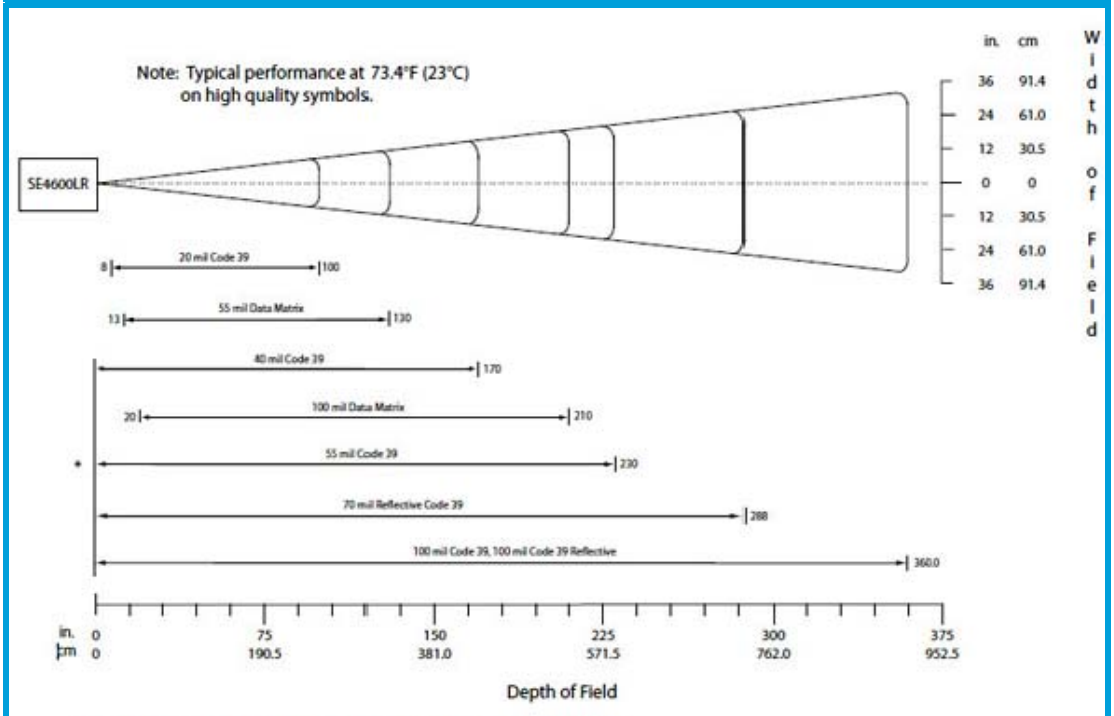
Parameter	Specification
Input Voltages VCC VCC_INTFC VCC_ILLUM VCC_SENSOR	 3.3 V ±10%, 75 mA max 1.8 V ±10% or 3.3 V ±10%, 30 mA max 3.0 V - 8.4 V, 800 mA 3.3 V ±10%, 70 mA max
VCC=VCC_SENSOR=VCC_INTFC =3.3 V VCC_ILLUM=5.0 V	
Operating Mode Supply Currents (Average) Low Power Idle Aim enabled, no illumination or image acquisition Image Acquisition Illumination Enabled Illumination and Aim Enabled	Low Power 750 µA 750 µA 20 mA 70 mA 80 mA 550 mA 600 mA
Maximum Sensor Power Supply Noise* (VCC_SENSOR)	40 mV p-p (10 Hz - 50 KHz) and 100 mV p-p (50KHz - 100 KHz) for bar code decoding 30 mV p-p (10 Hz - 100 KHz) for image capture
Optical Resolution	Near sensor: 5 mil (Code 39), 10 mil (Data Matrix) Far sensor: 15 mil (Code 39), 35 mil (Data Matrix)
Specular Dead Zone: Illumination On Illumination Off	 Up to 20º depending on target distance and substrate glossiness None
Skew Tolerance	± 60º
Pitch Angle	± 60º
Roll	360º
Ambient Light Immunity (Sunlight)	9000 ft. candles (96,900 lux)
Imaging Sensor: Image Resolution Grey Scale Field of View (FOV)	 752 H x 480 V pixels (wide VGA) 256 levels (8 bits per pixel) SE4600LR Far System: 11.6º horizontal, 7.4º vertical SE4600LR Near System: 13º horizontal, 8.3º vertical

Parameter	Specification
Aiming Element: Visible Laser Diode (VLD) Aiming Dot Optical Power	 655 ±5 nm (dominant wavelength) 0.6 mW (typical)
Illumination System: LEDs Pattern Angle	 625 ± 5 nm (dominant wavelength) 16º horizontal x 11.5º vertical
Shock	2000 G ± 5% in the direction of any of the six principal axes applied via the mounting surface at -20º and 55º C for a period of 0.85 ± 0.1 msec 2500 G ± 5% in the direction of any of the six principal axes applied via the mounting surface at 23º C for a period of 0.70 ± 0.07 msec
Vibration	Unpowered SE4600LR withstands a random vibration along each of the X, Y, and Z axes for a period of one hour per axis (6 G rms), defined as follows: 20 to 80 HzRamp up at 0.04 G^2/Hz at 3 dB/octave 80 to 350 Hz 0.04 G^2/Hz 350 Hz to 2 kHz Ramp down at 0.04 G^2/Hz at 3 dB/octave
ESD	± 2 kV @ connector
Laser Safety Class	CDRH / IEC Class 2
LED Class	IEC Class
Temperature: Operating Storage	 -20º to 55º C (-4º to 131º F) -40º to 70º C (-40º to 158ºF) (-30º C (22º F) for Omnii XT15f Arctic variant)
Humidity: Operating) Storage	 95% RH, non-condensing at 55º C 85% RH, non-condensing at 70º C
Maximum Engine Dimensions	38.23 mm W x 19.34 mm H x 27.00 mm D 1.51 in. W x 0.76 in. H x 1.06 in. D
Weight	45 - 52 grams (1.59 - 1.83 oz)
Electrical Interface	27 pin 0.3 mm pitch ZIF connector
NOTE: Environmental and/or tolerance parameters are not cumulative. A thermal analysis is recommended if the application is subject to an extreme temperature environment.	

SE4600LR Decode Zones



Notes:
Bar code width = 10.9 in. @ 49 in. depth of field.
Total readable bar code width is 2x the width appearing at the top or bottom of the Width of Field scale.



* Near range determined by degree of reflectivity and width of bar code.

Notes:
Bar code width = 72.8 in. @ 360 in. depth of field.
Total readable bar code width is 2x the width appearing at the top or bottom of the Width of Field scale.

APPENDIX E OMNII SPECIFICATIONS

The Omnii Hand-Held Computer (Model 7545) E-3
Hardware E-3
Regulatory Approvals E-5
Lithium-ion Smart Battery 5000 mAh (ST3001) E-5
Wireless Radios E-6
Cinterion MC75i GSM/GPRS/EDGE Radio E-6
Cinterion PH8-P GSM/GPRS/EDGE/UMTS/HSPA+ Radio E-7
Model RA2070 802.11a/b/g/n Radio E-9
Bluetooth Radio E-10

The Omnii Hand-Held Computer (Model 7545)

NOTE For Omnii freezer unit hardware specifications, please go to Appendix F: “Omnii XT15f Freezer Variants”.

NOTE Performance specifications are nominal and subject to change without notice.

Hardware

Physical Dimensions

- Width: At display: 100 mm (3.94 in)

  At docking connector: 45 mm (1.77 in)
- Depth: At display: 44 mm (1.73 in)

  At docking connector: 45 mm (1.77 in)

  At grip area: 31 mm (1.22 in)
- Weight: Basic unit with battery: 610g (1.34 lb)

  With battery, high visibility display, camera, Push-To-Talk speaker, EV15 1D imager: 636g (1.40 lb)

Processor and Memory

- Texas Instruments® Sitara AM37xx, ARM Processor 800 MHz (OMAP3® compatible)
- RAM: 512 MB
- Flash ROM: 1 GB

Operating System

- Microsoft Windows® Embedded CE 6.0

User Interface

- Colour/Touch Display: 9.4 cm (3.7 in) diagonal.

  VGA (640 x 480) Transflective.

  High Visibility option: superior sunlight visibility with 165 cd/m2 brightness.

  Extreme Duty option: withstands 1.25 Joule impact, superior low temperature operation (to -20° C/-4° F), with 160 cd/m2 brightness. Better abrasion resistance.
- Keyboards: High reliability keypad ultra-white backlight.

  Large selection of both alpha and numeric formats. See:

  http://www.motorolasolutions.com/US-EN/Product+Lines/Psion/?WT.mc_id=psion_us_p_handheld

  for a list of available configurations.
- Indicators and Controls: Four multi-colour LEDs indicate the status of the battery, application, radio, and scanner.
- Side Buttons: Volume, Scan, Enter, Vertical Scroll.
- Voice, Audio & Feedback: High volume beeper: 95 dBA.

  Integrated Microphone and speaker.

Optional Push-to-Talk speaker.

Walkie-talkie style Push-to-Talk – VoIP over Wi-Fi or WWAN.

Vibration feedback.

Power Management

- Battery Pack: 5000 mAh high capacity Lithium-ion (for battery specifications, see “Lithium-ion Smart Battery 5000 mAh (ST3001)” on page E-5).

Expansion Ports

- MicroSD slot for Flash expansion (up to 32 GB).
- Multiple Internal Multi-Function Expansion Interfaces with:

  - TTL serial

  - USB host

  - GPI0

Camera (optional)

- Colour.
- 3 Megapixel.
- Autofocus.
- 4x digital zoom.
- Dual LED flash.
- Video capable.

Enhanced Features

- 3 axis accelerometer.
- GPS.
- Compass.

Environmental

- Operating Temperature: -20°C to +50°C (-4°F to +122°F)
- Storage Temperature: -40°C to +60°C (-40°F to +140°F)
- Humidity: 5% to 95% RH non-condensing.
- ESD: +/- 8 kV contact, +/- 15 kV air discharge.
- Omnii RT15 Drop Durability:

  1.5 m (5 ft.), 26 drops to polished concrete (powered on, with accessories); multiple 1.8 m (6 ft.) drops to polished concrete.

  Rain And Dust Resistance:

  IEC 60529, classification IP65.

- Omnii XT15 Drop Durability:

  1.7 m (5.6 ft.), 26 drops to polished concrete (powered on, with accessories); multiple 2.0 m (6.5 ft.) drops to polished concrete.

Rain And Dust Resistance:

IEC 60529, classification IP67.

Regulatory Approvals

- Worldwide Safety, EMC, RF, Laser approvals
- CE Mark
- E Mark (vehicle cradles)
- RoHS compliant
- WEEE compliant
- REACH compliant

Lithium-ion Smart Battery 5000 mAh (ST3001)

For safety instructions, please see “Lithium-ion Battery Safety Precautions” in the *Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191)*.

Parameter	Specification
Model Number	ST3001
Chemistry	lithium-ion (Li-Ion)
Capacity	5000 mAh nominal at 1000 mA discharge 20°C to 3.0 V (min)
Voltage	3.7 V nominal (2.75 V min. to 4.2 V max.)
Cell Configuration	1 S2P (2 parallel connected cells)
Max. Charge Voltage	4.2 V +/- 1%
Recommended Charge Termination Timeout	5.0 hr - charging must stop.
Charge Temperature	0°C to +40°C (32°F to +104°F)
Discharge Temperature	-20°C to +50°C (-4°F to +122°F)
Storage Temperature	-20°C to +50°C (-4°F to +122ºF). Storage at elevated temperatures not recommended. 25°C (77ºF) — recommended storage temperature.
Cycle Life	300 cycles minimum with no degradation below 70% of nominal capacity based on 0.5C charge / 0.5C discharge rates (to 3.0 V) @ 23°C (73.4ºF).

Wireless Radios

Cinterion MC75i GSM/GPRS/EDGE Radio

Parameter	Specification
Manufacturer	Cinterion, Model MC75i
Form Factor	Quad-Band GSM 850/900/1800/1900 MHz EDGE (E-GPRS) multi-slot class 12 GPRS multi-slot class 12 GSM release 99
Output Power	Class 4 (2 W) for EGSM850 Class 4 (2 W) for EGSM900 Class 1 (1 W) for GSM1800 Class 1 (1 W) for GSM1900
Control via AT Commands	Hayes, 3GPP TS 27.007 and 27.005
Supply Voltage Range	3.2 to 4.3 V
EDGE Data Transmission	EDGE class 12: max 236.8 kbps (downlink) Mobile station class B Modulation and coding scheme MCS 1-9
GPRS Data Transmission	GPRS class 12 Mobile station class B PBCCH support Coding schemes CS 1-4
CSD Data Transmission	Up to 14.4 kbps, V.110 Non-transparent mode
SMS	Point-to-point MO and MT Text and PDU mode

Parameter	Specification
Voice	Triple-rate codec for HR, FR, and EFR Adaptive multi-rate AMR Basic hands-free operation Echo cancellation Noise reduction
Interfaces	Hirose U.FL-R-SMT 50 ohm antenna connector Antenna solder pad Molex 80-pin board-to-board connector: Power supply Audio: 2x analog, 1x digital Serial interface (ITU-T V.24 protocol) SIM card interface 3 V, 1.8 V

Cinterion PH8-P GSM/GPRS/EDGE/UMTS/HSPA+ Radio

Parameter	Specifications
General	
Frequency bands	GSM/GPRS/EDGE: Quad band, 850/900/1800/1900MHz UMTS/HSPA+: Five band, 800/850/900/1900/2100MHz
GSM class	Small MS
Output power (according to Release 99)	Class 4 (+33dBm ± 2dB) for EGSM850 Class 4 (+33dBm ± 2dB) for EGSM900 Class 1 (+30dBm ± 2dB) for GSM1800 Class 1 (+30dBm ± 2dB) for GSM1900 Class E2 (+27dBm ± 3dB) for GSM 850 8-PSK Class E2 (+27dBm ± 3dB) for GSM 900 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1800 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1900 8-PSK Class 3 (+24dBm +1/-3dB) for UMTS 2100, WCDMA FDD Bd I Class 3 (+24dBm +1/-3dB) for UMTS 1900,WCDMA FDD Bd II Class 3 (+24dBm +1/-3dB) for UMTS 900, WCDMA FDD Bd VIII Class 3 (+24dBm +1/-3dB) for UMTS 850, WCDMA FDD Bd V Class 3 (+24dBm +1/-3dB) for UMTS 800, WCDMA FDD Bd VI
HSPA features	
3GPP Release 6, 7	DL 14.4Mbps, UL 5.7Mbps UE CAT. [1-6], 11, 12 supported Compressed mode (CM) supported according to 3GPP TS25.212

Parameter	Specifications
UMTS features	
3GPP Release 4	PS data rate - 384 kbps DL / 384 kbps UL CS data rate - 64 kbps DL / 64 kbps UL
GSM/GPRS/EGPRS features	
Data transfer	GPRS: • Multislot Class 10 • Full PBCCH support • Mobile Station Class B • Coding Scheme 1 - 4 EGPRS: • Multislot Class 10 • EDGE E2 power class for 8 PSK • Downlink coding schemes - CS 1-4, MCS 1-9 • Uplink coding schemes - CS 1-4, MCS 1-9 • SRB loopback and test mode B • 8-bit, 11-bit RACH • PBCCH support • 1 phase/2 phase access procedures • Link adaptation and IR • NACC, extended UL TBF • Mobile Station Class B CSD: • V.110, RLP, non-transparent • 14.4kbps • USSD
SMS	Point-to-point MT and MO
GPS features	
Protocol	NMEA
Modes	Assisted GPS (control plane AGPS, E911)
General	Power saving modes GPS tracking in parallel to 2G/3G diversity operation
Software	
AT commands	Hayes, 3GPP TS 27.007 and 27.005, and proprietary Cinterion Wireless Modules commands
SIM Application Toolkit	SAT Release 99

Parameter	Specifications
Audio	Audio speech codecs GSM: AMR, EFR, FR, HR 3GPP: AMR Speakerphone operation, echo cancellation, noise suppression
Interfaces	
Antenna	50Ohms. Main GSM/UMTS antenna, UMTS diversity antenna, GPS antenna (active/passive)
USB	USB 2.0 High Speed (480Mbit/s) device interface
UICC interface	Supported chip cards: UICC/SIM/USIM 3V, 1.8V
Special features	
Phonebook	SIM and phone
Antenna	SAIC (Single Antenna Interference Cancellation) / DARP (Downlink Advanced Receiver Performance) RX diversity type 3i

Model RA2070 802.11a/b/g/n Radio

Parameter	Sub-parameter	Specification
Manufacturer		Model RA2070 (Murata, LBEH1Z9PFC)
Form Factor		Embedded surface mount module, 11.4 x 9.4 mm * This is a combo module containing both Wi-Fi 802.11a/b/g/n and *Bluetooth* V2.1+EDR radio
Antenna Port	802.11b/g/n	U.FL jack. Non-diversity. Multiplexed between 802.11b/g/n (2.4GHz) and *Bluetooth* radio
	802.11a/n	U.FL jack. Non-diversity.
Antenna Type	802.11b/g/n	PCB substrate patch antenna. Covers 2400-2484 MHz @ <2.5:1 VSWR
	802.11a/n	PCB substrate patch antenna. Covers 5150-5860 MHz @ <2.5:1 VSWR
Antenna Gain	802.11b/g/n	1.9 dBi
	802.11a/n	1.9 dBi
Transmit Power	802.11b	+18 dBm typical, +19.5 dBm max
	802.11g	+13 dBm typical, +14.5 dBm max
	802.11a	+12 dBm typical, +13.5 dBm max
	802.11n (2.4 GHz)	+12 dBm typical, +13.5 dBm max
	802.11n (5 GHz)	+12 dBm typical, +13.5 dBm max
Frequency Range	802.11b/g/n	2400-2483.5 MHz
	802.11a/n	5150-5350 MHz, 5480-5720 MHz and 5725-5845 MHz

Parameter	Sub-parameter	Specification
Channels	802.11b/g/n	1 to 13. Up to 13 channels (depending on country). Only 3 channels are non-overlapping.
	802.11a/n	36, 40, 44, 48, 52, 56, 60, 64 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140 149, 153, 157, 161, 165 Up to 24 channels (depending on country). All channels are non-overlapping.
RX Sensitivity	802.11b	-78 dBm @ 11 Mbps
	802.11g	-67 dBm @ 54 Mbps
	802.11a	-67 dBm @ 54 Mbps
	802.11n (2.4 GHz)	-66 dBm @ 65 Mbps
	802.11n (5 GHz)	-66 dBm @ 65 Mbps
Data Rates	802.11b	1, 2, 5.5, 11 Mbps
	802.11a/g	6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11n	6.5, 13, 19.5, 26, 39, 52, 58.5, 65 Mbps
EVM	802.11b	32% max
	802.11g	-26 dB max
	802.11a	-26 dB max
	802.11n (2.4 GHz)	-29 dB max
	802.11n (5 GHz)	-29 dB max
Bluetooth Coex-istence		TI Wilink6 proprietary WiFi-BT co-existent scheme.

Bluetooth Radio

Parameter	Specification
Manufacturer	Murata, Model LBEH1Z9PFC
Form Factor	Embedded surface mount module, 11.4 x 9.4 mm * This is a combo module containing both Wi-Fi 802.11a/b/g/n and *Bluetooth* V2.1+EDR radio
Antenna Port	U.FL jack (shared with Wi-Fi 802.11b/g/n radio)
Antenna Type	PCB substrate patch antenna. Covers 2400-2484 MHz @ <2.5:1 VSWR
Antenna Gain	1.9 dBi
Transmit Power	6.5 dBm typical, 8.5 dBm max
Frequency Range	2.400-2.4835 GHz
Channels	79
RX Sensitivity	-90 dBm typical, -70 dBm max

Parameter	Specification
Data Rates	V1.2=732.2 kbps and 57.6 kbps asymmetric, 433.9 kbps symmetric V2.0=2 & 3 Mbps
802.11 Coexistence	TI Wilink6 proprietary WiFi-BT co-existent scheme.

APPENDIX F OMNII XT15F FREEZER VARIANTS

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The Omnii XT15f Hand-Held Computer (Model 7545XT)

NOTE Performance specifications are nominal and subject to change without notice.

The Omnii XT15f is a modular, industrial hand-held computer suitable for cold chain and extreme weather environments. These units are equipped with heating hardware to prevent condensation from developing on or inside the Omnii.

Two variants are available – the Chiller and the Arctic. The Chiller model is condensing-resistant, and the Arctic model is condensing-free. This variant is equipped with a heated scanner window and a standard 5000 mAh battery (model number ST3001). An optional freezer battery (model number ST3002) can be ordered for the Chiller variant. The Omnii Arctic freezer variant is equipped with an optically bonded heated display module, providing a condensation-free unit. It is only available with an ST3002 freezer battery.

NOTE The Omnii Hand-Held Computer is a body worn device, and to maintain compliance with the FCC RF exposure guidelines, use a Motorola approved carrying case. Use of non-approved accessories may violate FCC RF exposure guidelines.

Model Variants

- Omnii XT15f Arctic Hand-Held Computer (extremely rugged, condensing-free) - Model 7545XT. This model features a multi-core heater control logic board that dynamically heats the scan window and LCD display.
- Omnii XT15f Chiller Hand-Held Computer (extremely rugged, condensing-resistant) - Model 7545XT. This model features a single core heater control logic board dynamically heats the scan window.

Figure F-6 *Omnii XT15f Freezer Variants*

Hardware Specifications

Physical Dimensions

- Length: 226 mm (8.89 in)
- Width: At display: 98 mm (3.86 in)
- Depth: At display: 82 mm (3.2 in))

  At grip area: 31 mm (1.22 in)
- Weight: 34 g (1.8 lb) with SE965HP laser, ST3002 battery, and pistol grip

Barcode Scanner Options

NOTE Both Arctic and Freezer variants include a heated scan window for Frost Free Scanning (FFS).

- SE965HP 1D standard range laser
- SE1524-ER 1D extended range laser
- SE4600LR 2D Long Range Imager

Display

- 3.7” VGA (640 x 480) Transflective Color/Touch Display

Chiller Variant:

- Extreme Duty, designed for rugged environments with improved impact resistance (1.25 Joule impact), better abrasion resistance, superior low temperature operation (to -20ºC / -4ºF), with 160 cd/m2 brightness.

Arctic Variant:

- Extreme Duty is designed for rugged environments with improved impact resistance (1.25 Joule impact), better abrasion resistance, superior low temperature operation (to -30ºC / -22ºF), with 160 cd/m2 brightness.
- The optically bonded display module prevents the build-up of condensation/fogging in-between the display and the touchscreen.
- The display heater is responsible for maintaining a acceptable refresh rate in extreme cold environments.

Keyboard

- Both variants include specially designed keyboards that resist freezing due to ice build-up in condensing environments.
- 58-key full alphanumeric with 6 single-push Function keys.
- 34-key numeric with 12 single-push Function keys.

Power Management

- Chiller Battery Pack: 5000 mAh high capacity Lithium-ion. For battery specifications, see “Lithium-ion Smart Battery 5000 mAh (ST3001) for Omnii Chiller Model” on page F-6.

  Optional 5300mAh high capacity smart freezer battery.
- Arctic Battery Pack: 5300 mAh high-capacity Lithium-ion smart freezer battery designed for improved performance in low temperature application. For specifications, see “Lithium-ion Smart Battery 5300 mAh (ST3002) for Omnii Arctic Model” on page F-7.

WARNING **Powered cradles are designed to allow the Omnii to be powered by a vehicle battery. The battery installed in the Omnii is also recharged by the vehicle battery. This option accepts DC power sources over the range 11.5V to 30V.**

For Omnii XT15f Chiller units, voltages above that require the use of the power preregulator Model No. PS1350. However, Omnii XT15f Arctic units operating in temperatures from -30°C to +50°C, require the use of the power preregulator Model No. PS1370.

For detailed information, see "ST1002 Powered Cradle Installation" on page 4-22.

Environmental

Chiller Variant:

- Operating Temperature: -20°C to +50°C (-4°F to +122°F)
- Storage Temperature:-40°C to +60°C (-40°F to +140°F)
- Humidity: 5% to 95% non-condensing (condensation-resistant)
- Rain/Dust: IP65, IP67, IEC 60759
- Drop Rating: Multiple 2 m (6.5 ft) drops to polished concrete
- ESD: +/- 8 kV contact, +/- 15 kV air discharge.

Arctic Variant:

- Operating Temperature: -30°C to +50°C (-22°F to +122°F)
- Storage Temperature: -40°C to +60°C (-40°F to +140°F)
- Humidity: Condensing (condensation-free using internal heaters)
- Rain/Dust: IP65, IP67, IEC 60759
- Drop Rating: Multiple 2 m (6.5 ft) drops to polished concrete
- ESD: +/- 8 kV contact, +/- 15 kV air discharge.

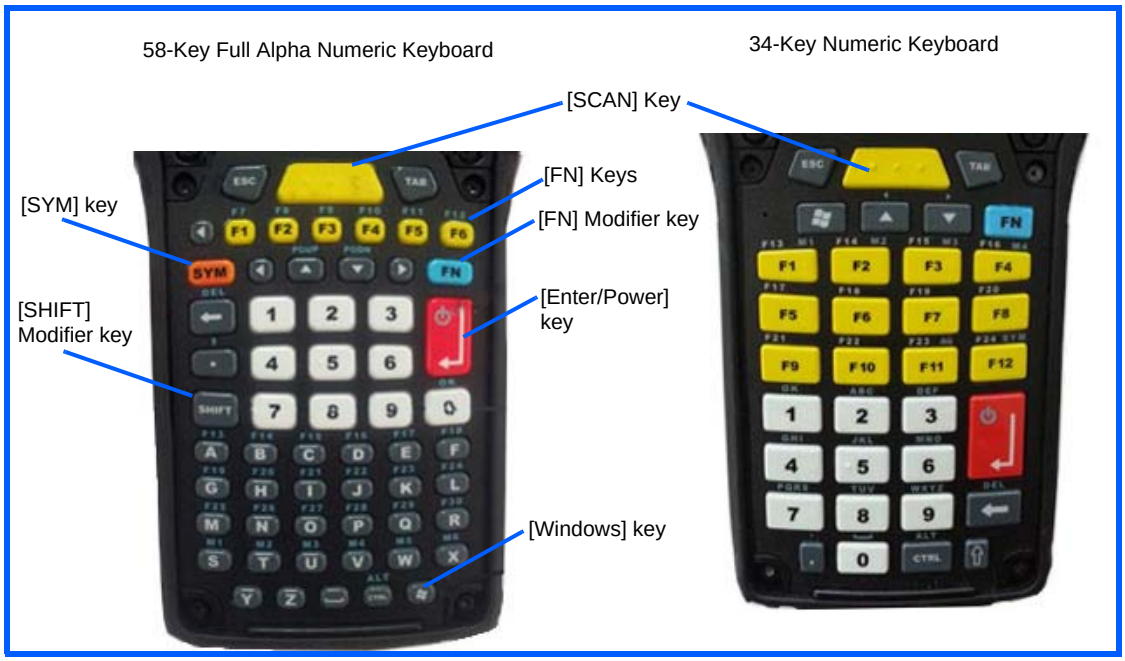
Regulatory Approvals

- Worldwide Safety, EMC, RF, Laser approvals
- CE Mark
- E Mark (vehicle cradles)
- RoHS compliant
- WEEE compliant
- REACH compliant

The Freezer Keyboards

Two keyboard layouts are available for the Chiller and Arctic hand-held units. Both variants include specially designed keyboards that resist freezing due to ice build-up in condensing environments.

Figure F-7 *Freezer Keyboard Layouts*



Lithium-ion Smart Battery 5000 mAh (ST3001) for Omnii Chiller Model

The Omnii Chiller model is shipped with the standard ST3001 Lithium-ion Smart Battery. The ST3002 Arctic Battery is available as an option. For more information about this battery, see “Lithium-ion Smart Battery 5300 mAh (ST3002) for Omnii Arctic Model” on page F-7.

For safety instructions, please see *“Lithium-ion Battery Safety Precautions”* in the *Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191)*.

Parameter	Specification
Model Number	ST3001
Chemistry	Lithium-ion (Li-Ion)
Capacity	5000 mAh nominal at 1000 mA discharge 20°C to 3.0 V (min)
Voltage	3.7 V nominal (2.75 V min. to 4.2 V max.)
Cell Configuration	1 S2P (2 parallel connected cells)
Max. Charge Voltage	4.2 V +/- 1%
Recommended Charge Termination Timeout	5.0 hr - charging must stop.
Charge Temperature	0°C to +40°C (32°F to +104°F)
Discharge Temperature	-20°C to +50°C (-4°F to +122°F)

Parameter	Specification
Storage Temperature	-20°C to +50°C (-4°F to +122ºF). Storage at elevated temperatures not recommended. 25°C (77ºF) — recommended storage temperature.
Cycle Life	300 cycles minimum with no degradation below 70% of nominal capacity based on 0.5C charge / 0.5C discharge rates (to 3.0 V) @ 23°C (73.4ºF).

Lithium-ion Smart Battery 5300 mAh (ST3002) for Omnii Arctic Model

The Omnii Arctic model is shipped with the ST3002 Lithium-ion Smart Battery. For safety instructions, please see “Lithium-ion Battery Safety Precautions” in the *Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191)*.

Parameter	Specification
Model Number	ST3002
Chemistry	Lithium-ion (Li-Ion)
Capacity	5300 mAh nominal at 1000 mA. Discharge @ 20°C to 2.75 V (min)
Voltage	3.6 V nominal (2.75 V min. to 4.2 V max.)
Cell Configuration	1 S2P (2 parallel connected cells)
Max. Charge Voltage	4.2 V +/- 1%
Recommended Charge Termination Timeout	5.0 hr - charging must stop.
Charge Temperature	0°C to +40°C (32°F to +104°F)
Discharge Temperature	-30°C to +50°C (-22°F to +122°F)
Storage Temperature	-20°C to +50°C (-4°F to +122ºF). Storage at elevated temperatures not recommended. 25°C (77ºF) — recommended storage temperature.
Cycle Life	300 cycles minimum with no degradation below 70% of nominal capacity based on 2.5A - 4.20V charge / 2.5A - 2.75V discharge rates @ 25°C (77ºF).

Figure F-8 *ST3002 Battery and Safety Label*

Quick Defrost Application

The Omnii XT15f is a freezer capable hand-held computer that has integrated heaters that are designed to improve the functionality and operation of the hand-held device in extreme cold environments. The Arctic variant has two heaters; one for the display, and one for the scan window. The Chiller variant has only one heater, which is located on the scan window. The *Quick Defrost* application is the nerve center of the heater-related information. The *Settings* tab allows the user to configure the suspend time of the heating system, as well as the scan window power setting. The *Heater Info* tab provides instantaneous heater information for each individual heater and the overall heating system. For environmental specifications for this computer, see “Hardware Specifications” on page F-4.

To ensure proper operation of the hand-held device in a freezer environment, the surface temperature is managed by the heating system to prevent the formation of external/internal condensation on critical modules. The heating system consists of two heating elements; one for the display and one for the scan window.

Quick Defrost Settings

The individual heaters for the computer modules can be monitored, and the duration of time for them to remain on during Suspend mode can be configured.

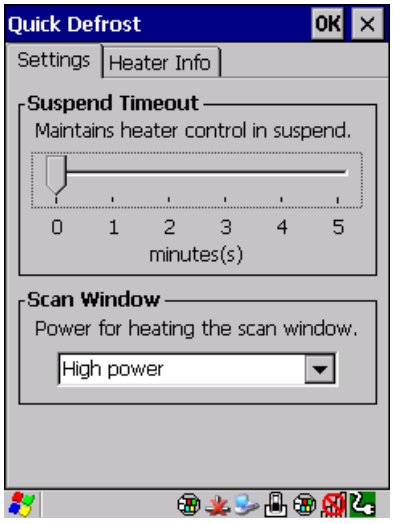
- In the *Control Panel*, choose the **Quick Defrost** icon.

Settings

The Quick Defrost application opens in the *Settings* tab.

Suspend Threshold

- The *Suspend Threshold* option allows you to maintain heat for a limited time when the computer enters Suspend mode. Once the threshold is reached, the heater will stay off while the computer is in suspend.
- To set the time, slide the trackbar to the desired time and click **OK**. Values range from 0 to 5 minutes.



NOTE A longer suspend threshold will reduce your overall battery shift life.

Scan Window

The *Scan Window* option allows you set the level of power for the periphery scan window heater. There are two pull down options:

High power (default): This heating profile has been designed for users that are in and out of the freezer frequently (with a freezer dwell time of less than 20min). This heating profile keeps a constant positive temperature on the scan window — eliminating any formation of external / internal condensation from frequent transitions. Please note that this heating algorithm provides additional power at the expense of the battery shift life.

Low power: This heating profile has been designed for users that will be spending long durations in the freezer environment. It is a less aggressive algorithm, compared to the high power mode, that maximizes battery shift life. It addresses the formation of internal condensation to keep the scan window clear of condensation.

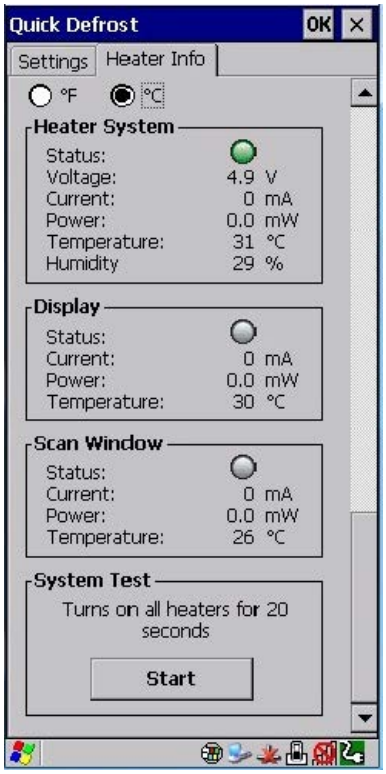
These two scan window power modes can be adjusted on the fly to give the user the needed flexibility for optimal performance.

Heater Info

- In the *Quick Defrost* dialog box, open the **Heater Info** tab. This dialog box allows you to monitor the status of each heater and test the entire system.

Temperature Selection

You have the option of setting the display temperatures to Celsius or Fahrenheit.



Heater System

This section displays information on the heater system.

Status

The LED state for this parameter indicates whether the communication with the Quick Defrost hardware is successful (green) or unsuccessful (red).

Voltage

This indicates the voltage applied to the heater system.

Current

This shows the total average current used by the heating system.

Power

This represents the total power used by the heating system.

Temperature

This shows the temperature measured inside the unit.

Humidity

This shows the humidity measured inside the unit.

Display and Scan Window Heaters

This section displays information on the individual heaters.

NOTE If the scanner/imager is not connected, the scan window heater will be disabled (greyed out).

Status

These status indicators report the heating mode for each individual heater.

	Blue indicates the heating element is operating in full power mode.
	Green indicates the heating element is operating in sustaining mode.
	Grey indicates the heating element is off.
	Red indicates a hardware failure with the heater.

Current

This indicates the average current drawn at the moment for the individual heater.

Power

This indicates the power used at the moment for each individual heater.

Temperature

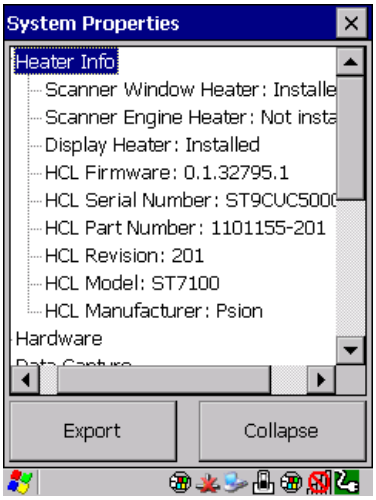
Shows the temperature measured near the heating element.

System Test

The system test feature allows you to test the functionality of all available heaters (for approximately 20 seconds) to make sure that the heating system — heaters and control board — are working properly.

System Properties

In *Control Panel>System Properties*, the computer's heater software and hardware components are listed under *Heater Info*. The information includes their identification, version or part numbers, and whether they have been installed.



APPENDIX G WIRELESS WIDE AREA NETWORK (WWAN) SETTINGS

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Wireless WAN

The Omnii is available with one of the following Wireless WAN (WWAN) radio options: the Cinterion MC75i EDGE and the Cinterion PH8-P HSPA+. An Omnii Hand-Held Computer equipped with a GSM/GPRS radio has wide area networking capabilities. With either of these radios and a SIM card, you can wirelessly transfer data, and you use the Omnii voice option to place phone calls.

Taskbar Icons

Wireless WAN icons in the taskbar indicate the status of your wide area network connection. Note that these icons are only visible when the relative radio is installed in the computer, and the interface is enabled.

The following taskbar icons are used:

- G - GSM/GPRS
- E - GSM/EDGE
- 3G - UMTS 3G
- U - UMTS/HSPA+

User interaction is required (e.g. the user is required to enter a PIN).

A non-recoverable (fatal) error has occurred.

The modem status is unknown or the modem is not connected to any network (the signal strength is 0%).

The modem has found a network, and the signal strength is between 1% and 20%.

The modem has found a network, and the signal strength is between 21% and 40%.

The modem has found a network, and the signal strength is between 41% and 60%.

The modem has found a network, and the signal strength is between 61% and 80%.

The modem has found a network, and the signal strength is between 81% and 100%.

Once the modem detects that a packet data service is available, a letter is added to the signal strength icon indicating the kind of packet data service. Keep in mind that the signal strength icon is displayed without a letter if packet data service is not available, or if it is available but not yet initialized.

For example:

The modem has found a network, the signal strength is between 41% and 60%, and GSM/GPRS packet service is available.

The signal strength icon is replaced by a connection indicator icon when a packet data connection is started:

A GPRS packet data connection is active.

In addition to the signal strength or connection indicator a second icon may be shown.

A new SMS (Short Message Service) message has arrived.

The dialer icon is displayed when the Voice option is available (SIM card and GPRS radio are installed). When you have an active call, this icon flashes yellow, and then green.

Establishing a Packet Data Connection

To display the main *Wireless WAN dialog* box:

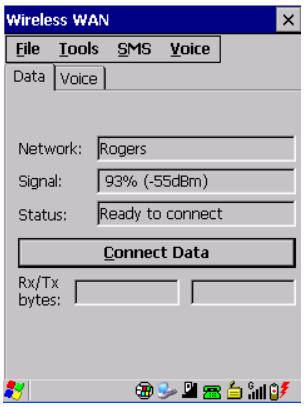
- Double-tap on the **Wireless WAN** icon in the taskbar.

If the icon is not visible in the taskbar, the radio interface has been shut down or the modem has been removed:

- In the *Control Panel*, choose the **Wireless WAN** icon.

The main *Wireless WAN* dialog box is displayed.

Figure G-9 *Establishing a Connection*



NOTE If you are prompted to enter a PIN, refer to "Entering a PIN Number" on page G-5 for details.

When "*Ready to connect*" is displayed in the *Status* field, the *Connect Data* button is enabled.

- Tap on the **Connect Data** button.

The progress of the connection is tracked in the *Status* field.

- Connecting.
- PPP link to modem active.
- Authenticating user.
- User authenticated.

- Connected.

NOTE Keep in mind that these states may be displayed fairly quickly if the progress of the connection is rapid.

When the connection state reaches *PPP link to modem active*, the taskbar icon changes to indicate an active connection. The *Connect Data* button changes to *Disconnect*.

Disconnecting From a Network

To disconnect from the network:

- Tap the stylus on the **Disconnect** button, and then on **OK**.

When the computer's network connection is severed, the *Status* field displays "*Ready to connect".*

The signal strength is displayed in the main Wireless WAN screen, even while a connection is active. The *Rx bytes* and *Tx bytes* fields estimate the amount of data transmitted and received, respectively.

Shutting Down the Wireless WAN User Interface

While it is not usual to shut down the GSM/GPRS user interface, you can accomplish this by tapping on the **File** menu and choosing the **Exit** command at the bottom of the main *Wireless WAN* dialog box.

NOTE Once you've shut down the user interface, you can only enable the radio by opening the Control Panel and tapping on the Wireless WAN icon to display the Wireless WAN dialog box.

Advanced Information

In most cases, when a GSM/GPRS radio and SIM are installed in your computer, setup is automatic. Follow the steps outlined under the heading "Establishing a Packet Data Connection" on page G-4 to make a connection. The information in this section is for advanced setup purposes.

Entering a PIN Number

If a PIN is required, a PIN entry dialog box is displayed.

- Type your PIN, and press **[Enter]**.

NOTE If you exceed the number of allowable attempts, a PUK entry window is brought to the foreground. You'll need to enter a new PIN number.

Once the correct PIN or PUK is entered or if none was required, the modem is instructed to perform a GSM network registration followed by a GPRS attach. The main *Wireless WAN* dialog box reflects the progress of the initialization.

- Searching for modem.
- Initializing modem.
- SIM is ready.
- Searching for network.
- Registered on network.
- Searching for GPRS.
- Ready to connect.

If the modem loses the connection to the GSM network, the following states are repeated: *Searching for network*, *Registered on network*, *Searching for packet data*, and *Ready to connect*.

Error States

The following temporary error states (i.e., these states may disappear without interaction) may be displayed:

- Emergency calls only.

  The modem has found a network but is not allowed to register (e.g. no roaming agreement between networks). The modem keeps searching for another network.

- No network found.

  A network is not currently available. The modem continues searching for a network.

- Packet data not available.

  The current network does not support a packet data service.

- Packet data not allowed.

  The modem is not allowed to use the packet data service on the current network (e.g. no GPRS roaming agreement between network; a roaming agreement for voice may still be in place). It is also possible that you do not have a subscription for GPRS at all.

The remaining error states are permanent:

- SIM is missing.

  The SIM card is missing. After the SIM has been inserted a warm boot may be required.

- SIM failure.

  The SIM card is permanently disabled (e.g. because the wrong PUK has been entered too many times). A new SIM is needed.

- Modem failure.

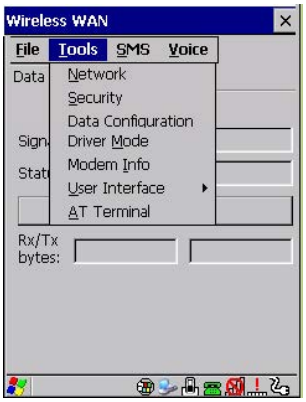
  The modem did not respond to commands as expected. If a warm boot does not clear this condition, the modem may need to be replaced.

- NDIS error.

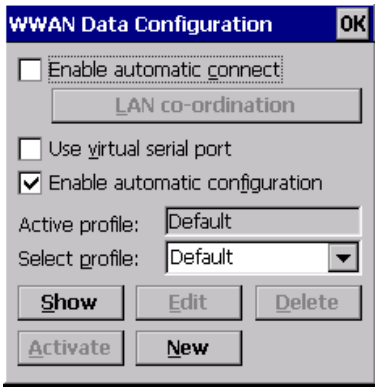
  An internal software error has occurred. If a warm boot does not clear this condition, Motorola technical support may need to investigate further.

Tools Menu

The *Tools* menu in the main *Wireless WAN* dialog box offers some additional, advanced setup features.



WWAN Data Configuration



Enable Automatic Connect

If the *Enable automatic connect* check box is checked (unchecked by default), the Wireless WAN user interface will attempt to establish a GPRS connection whenever GPRS is available (e.g. after resume from suspend without further user interaction).

To activate the automatic connection mode:

- Tap on the **OK** button.

While automatic connection mode is enabled, the *Connect Data* button in the main *Wireless LAN* dialog box changes to *Disable Auto*. To close the currently active connection (if any) and disable the automatic connection mode:

- Tap on **Disable Auto.**

IMPORTANT Automatic connection mode should not be used if applications other than the Wireless WAN user interface (e.g. Connection Manager) are expected to open and close connections.

If the automatic connection mode is enabled and another application closes the GPRS connection, the WWAN user interface will immediately try to re-establish the connection.

Use Virtual Serial Port

If *Use virtual serial port* is enabled, packet data connections are established through the virtual serial port of the WWAN driver rather than through the WWAN driver directly. This check box should *only* be checked if certain third-party VPN (Virtual Private Network) clients are used that do not work correctly otherwise. The default setting is **disabled** (unchecked).

NOTE The connection setup takes longer through the virtual serial port.

Enable Automatic Configuration

In most cases, *the data connection is configured automatically and no user interaction is required*. This is true even if multiple SIM cards from different operators are used with the same device. The connection parameters are adjusted automatically when a new SIM card is detected (this may require a warm boot). The connection parameters are retrieved from a database.

Manual configuration should be necessary only if:

- One or more parameters in the database are incorrect or a new operator is not yet in the database. (The database should be corrected for subsequent software releases.)
- An operator has assigned individual GPRS user names and passwords.
- A very large site has its own APN. Such connections always have to be configured manually.
- A customer has subscribed for a static IP address. By definition this must be configured manually.
- An operator may use a different APN for certain groups of customers. Since the automatic configuration can configure only one APN per operator such connections have to be configured manually.

Profiles

In the following section, all the parameters that need to be configured for a connection (such as APN, user name, password, DNS server addresses etc.) are referred to as a *profile*. Every profile is identified by an arbitrary, unique name. The profile named *Default* is special in that it is always present and can neither be edited nor deleted. The *Default* profile uses parameters from a built-in database. The home network (the network that issued the SIM) is used for the database look-up. While there can be many configured profiles, only one profile can be active at any time.

If connection profiles are configured manually, the *Enable automatic configuration* check box should normally be unchecked.

In one particular use case, manually configured profiles may be combined with automatic configuration. If multiple SIM cards are used with the same device, each SIM card being from a different operator and some or all of them requiring a manually set up profile, automatic configuration may be used to automatically pick the correct manually configured profile for each SIM card. For this to work, each profile must be configured while the corresponding SIM card is inserted in the device and initialized (i.e. the status is at least *Searching for network*).

The *Select profile:* drop-down list in the data configuration profile selects to which profile a subsequent action applies. A profile named *Default* is always present and contains the current parameters from the database. The following actions are available:

Show

The parameters for the selected profile are displayed when you tap the stylus on this button. For the *Default* profile, the publicly known password is shown — otherwise, the password is hidden.

Edit

The parameters of the selected profile can be edited when you choose the *Edit* button. Keep in mind that you cannot edit the Default profile.

Delete

The selected profile is deleted. You cannot delete the *Default* profile.

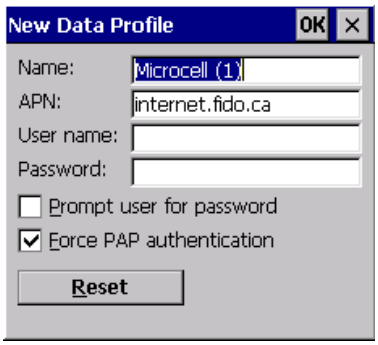
Activate

When this button is chosen, the selected profile becomes the active profile. Activation is possible only if the *Enable automatic configuration:* check box is unchecked.

New

Tapping on the *New* button allows you to create a new profile.

Figure G-10 *Creating a New Profile*



The name of the newly created profile must be different from all existing profiles. Also, the name cannot be *Default*. When the *New Data Profile* dialog box is opened, a proposal for a unique name is filled in the corresponding entry field. If a manually configured profile has a secret password and unauthorized access to the device is a concern even after the SIM PIN has been entered, the password should not be entered in the *New Data Profile* dialog box and the *Prompt user for password* check box should be checked instead. In this case, you will be prompted for the password each time a connection is initiated (the *Connect Data* button in the main *Wireless WAN* dialog box is selected).

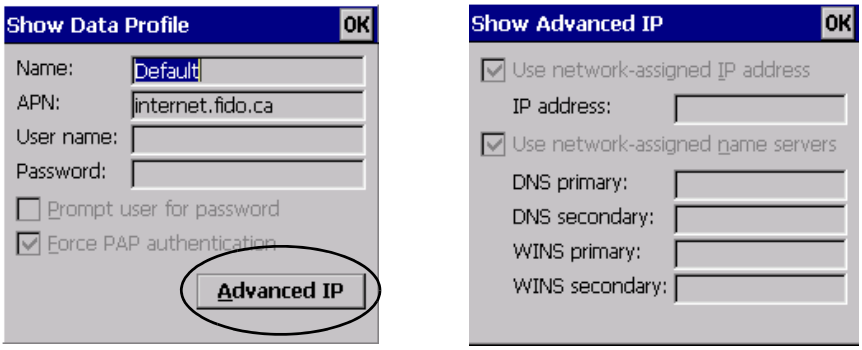
By default the connection uses PAP (Password Authentication Protocol), a simple authentication protocol used to authenticate a user to a remote access server or Internet Service Provider. However, if your ISP does not support PAP, tapping in the box to the left of *Force PAP authentication* disables PAP and directs the connection to use CHAP (Challenge Handshake Authentication Protocol) instead.

Reset

The *Reset* button in the *New Profile* and *Edit Profile* dialog boxes resets all entry fields to the values they had when the dialog box was opened.

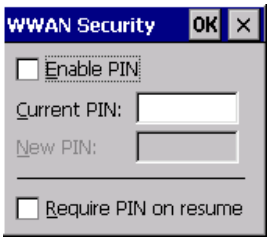
Advanced IP

Figure G-11 *Assigning IP Information*



The *Advanced IP* button in the *Show Profile* and *Edit Profile* dialog boxes opens another dialog box that allows you to configure a static IP address as well providing DNS and WINS fields so that you can specify DNS and WINS resolvers.

Security Configuration



The *Security Configuration* dialog box is accessed through the *Tools* menu. The *Security Configuration* dialog box allows you to enable, disable and change the PIN. You will need the current PIN to make any of these changes. The PIN must be enabled in order to be changed. (If the PIN is disabled, the *New PIN* entry field is greyed out.)

NOTE Keep in mind that some network operators do not allow the SIM PIN to be disabled. A new PIN must consist of 4 to 8 numeric digits.

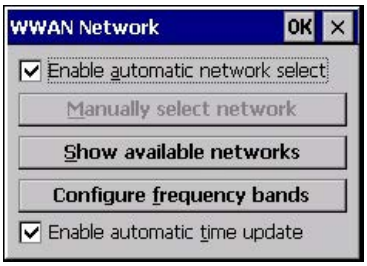
The *Require PIN on resume* check box is independent of the aforementioned settings. By default, this check box is unchecked. While this option remains unchecked, any PIN entered on startup or through the *Security Configuration* dialog box and submitted successfully to the modem is stored in memory for as long as the device is not rebooted. This stored PIN is then used without further user interaction whenever the modem requires a PIN (such as resume after suspend or modem removal). The stored PIN is also automatically entered in the *Current PIN* text box whenever the *Security Configuration* dialog box is called up.

If unauthorized access to the device is a concern, the *Require PIN on resume* check box should be checked. In this case, the PIN is not stored; whenever a PIN is required, you will be prompted to enter an appropriate value.

Network Configuration

In the main Wireless WAN window:

- Tap on the **Tools** menu, and choose **Network**.



Enable Automatic Network Select

By default the GSM radio modem automatically chooses from the available and allowed networks (allowed networks are the home network and all other networks with which the home network has a roaming agreement). You may find there are some situations in which you want to override this default behaviour. For example, you may want to disable roaming if you find yourself in a border area where the home network is not available but a foreign roaming partner is available. Abroad, you may find that an available network does not have GPRS roaming agreements. In this case, you'll need to manually select the network which you know to support GPRS roaming.

Automatic network selection is enabled or disabled by checking or unchecking *Enable automatic network select* in the *Network* dialog box. When automatic network selection is disabled, you must select a network manually.

Show Available Networks

Available networks can also be viewed without changing any settings. Scanning for available networks is a lengthy operation — a progress bar is shown while the scan is active. For every network that is found, the network name, country, status and numeric network identifier (MCC/MNC, Mobile Country Code followed by the Mobile Network Code) is displayed.

NOTE Your home network operator will need to let you know which other networks have roaming agreements. Even when a network is listed with an *Available* status, it does not necessarily follow that it can be used or that the roaming agreement covers GPRS.

A status of *Forbidden* indicates that the network cannot be used. If you choose a network that is not covered by a roaming agreement, the status in the main WWAN dialog box changes to *Emergency calls only*, *No network found*, *GPRS not available* or *GPRS not allowed*.

Configure Frequency Bands

The network selection can be modified by enabling or disabling GSM and UMTS frequency bands.

IMPORTANT Care must be taken when disabling bands — the wrong band will prevent the modem from registering with the network (that is, not even emergency calls are possible if a mistake is made).

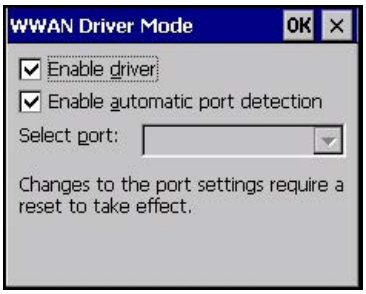
By default all bands supported by the installed WWAN modem are enabled. All bands that are not supported by the installed modem are greyed-out. While some modems (e.g. Cinterion PH8-P) allow all possible combinations of supported bands to be selected, others do not (e.g. Cinterion MC75i). A warning is displayed if an unsupported band combination is chosen.

By enabling only bands in use on a given network, the network search time (e.g. after losing the network due to a coverage gap) is improved. Through the band configuration it is possible to force the modem into GSM-only or UMTS-only mode. As an example, this is useful if a legacy application needs to use a dial-up connection and the network supports dial-up connections only on GSM but not on UMTS (as is the case with many European networks).

Enable Automatic Time Update

If this feature is enabled, it allows the system time and time zone to be updated with information received from the WWAN network. This feature is network-dependent. If the WWAN network supports NITZ (“Network Information and Time Zone”), then it can send the current time, time zone, or both to the terminal.

Driver Mode Configuration



By default, the Wireless WAN driver is enabled (the *Enable driver* check box is checked). If the *Enable driver* check box is not checked, the driver is shut down as soon as the *OK* button in the *Driver Mode* dialog box is chosen.

If, on the other hand, the Wireless WAN driver is not running and the *Enable driver* check box is checked, the Wireless WAN driver is started as soon the *Driver Mode* dialog box is closed using the *OK* button.

NOTE When the driver is not running, no network status or signal strength can be displayed.

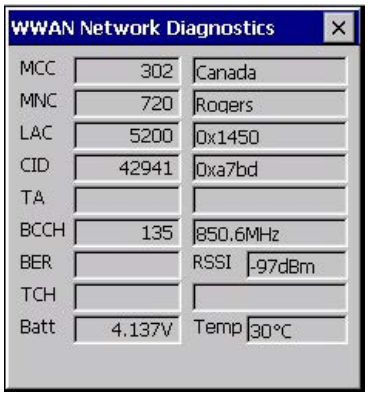
Since all currently supported GSM modems are automatically detected, the *Enable automatic port detection* check box should always be checked. If this check box is not checked, a serial port can be selected manually. This experimental feature allows the driver to be used with an internal GSM modem that was not recognized by the automatic detection or an external GSM modem connected to a serial port of the computer through USB or through *Bluetooth*. An external modem connected to a serial port must support 115.2 kbit/s, 8bit, no parity and hardware flow control.

Modem Information

The fields in this dialog box cannot be edited, they only display information about the computer's modem. If the network operator has not programmed a user's phone number into his SIM, the *Phone:* field remains empty. If the main menu shows an error status, at least partial modem information may be available.

Diagnostics and More

The *Diagnostics* screen may be useful when diagnosing network problems. The information presented here is not needed for normal operation. The *More* button shows you some additional detail about your modem.

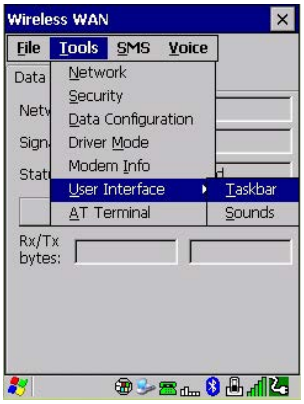


The following Diagnostics values are displayed:

- MCC Mobile Country Code (decimal value and, if available, decoded country name)
- MNC Mobile Network Code (decimal value and, if available, decoded network name)
- LAC Location Area Code (decimal and hexadecimal value)
- CID Cell Identifier (decimal and hexadecimal value)
- TA Timing Advance (decimal value and converted distance to base station in meters)
- BCCH Broadcast Control Channel (ARFCN or UARFCN value and converted frequency in MHz)
- BER Bit Error Rate
- RSSI Received Signal Strength Indication
- TCH Traffic Channel (ARFCN value and converted frequency in MHz)
- Batt Battery voltage as measured by the WWAN modem
- Temp WWAN modem Temperature

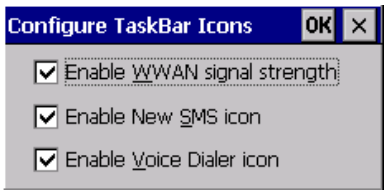
Note that *TA*, *BER*, and *TCH* are available only in GSM mode and only while there is an active connection (e.g. a voice call). If the status in the main window shows No *network found* or *Searching for network*, then typically only *Batt* and *Temp* are available. For the status *Emergency calls only*, *MCC*, *MNC*, *LAC*, *CID*, and *BCCH* may be available. For the GSM 1800 MHz and GSM 1900 MHz bands it may not be possible to convert the ARFCN for BCCH and TCH to a frequency because the channel numbers overlap. This can be overcome by enabling only the GSM bands used by a particular network (i.e. either GSM 1800MHz or GSM 1900 MHz is disabled). If the network uses frequency hopping during GSM voice calls, then *hopping* is displayed in the TCH field.

User Interface



Taskbar

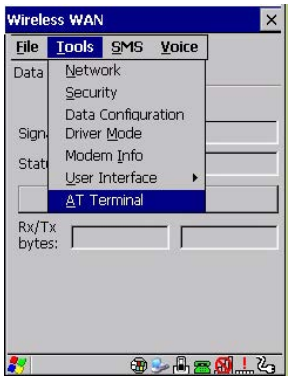
Choosing *Taskbar* displays a dialog box in which you can determine which Wireless WAN icons will be displayed in the taskbar.



Sounds

Tapping on the *Sounds* option displays a dialog box in which you can customize which sounds your Omnii will emit and when these sounds will be played.

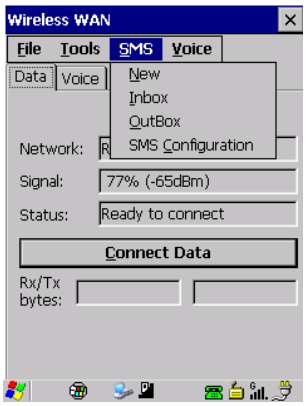
AT Terminal



The AT Terminal window allows AT commands to be entered and sent to the modem. In some situations (e.g. during approval testing) it may be required to enter AT commands. This feature should only be used if one has a good understanding of the AT command set of the installed WWAN modem.

SMS Menu

SMS (Short Message Service) functions are accessed through the SMS menu. For modems that support a SIM card, the SIM initialization typically takes longer than the network initialization, resulting in a noticeable delay before the SMS functions become available.



New

Tapping on the *New* button opens a dialog for sending a new SMS message. The recipient's phone number (to be entered in the *To:* field) can consist of the digits 0 through 9, as well as the * and # characters, optionally preceded by one + character, indicating an international number (i.e. the country code follows immediately after the + character).

By checking the *Store message in Outbox* field a new message can be stored in the Outbox before being sent. If no storage space is available, or the modem does not support the storage of outgoing messages, then this check box is disabled.

Inbox

Tapping on the *Inbox* button opens the list of received messages. Reading 50 messages, for example, from the SIM can take about 30 seconds. By default the list of messages is sorted with the most recently received message first. The list can be sorted by any other column by clicking on the corresponding column heading.

Clicking the same column heading twice reverses the sort order. Tapping on any letter or digit moves the highlight to the next message whose address begins with that letter or number.

NOTE The date and time formats can be changed through the Region and Language menu in Control Panel. For a new date or time format to take effect the Inbox has to be closed and re-opened.

The *Open* button opens the selected message in a new window such that the entire message can be read including the original formatting (line breaks are replaced by spaces in the Inbox message list). Pressing the **Reply** button opens the new message dialog as described above, except the destination phone number is filled in already.

Outbox

Tapping on the *Outbox* button opens the list of sent messages. Otherwise the *Outbox* behaves exactly as the Inbox described above. The date and time when a message was sent is not available for GSM modems.

SMS Configuration

Tapping on the *SMS Configuration* button opens the SMS configuration dialog. The SMS Centre address follows the same rules as the recipient's phone number in the New message dialog. The message validity period parameter is sent to the SMS Centre with each message sent subsequently and instructs the SMS Centre on how long it should attempt to deliver the message to the recipient (the SMS Centre may impose an upper limit on the validity period regardless of the setting).

NOTE Only certain discrete validity period values can be sent and thus the validity period is rounded to the nearest allowed value. The next time the SMS configuration dialog is opened the rounded value is shown.

The user interface tries to keep the SMS storage location available for a new incoming message if the Delete oldest message when full check box is checked. In this case, when a new message arrives and the SMS storage becomes full, the oldest received message is deleted. If any string is entered as the *Message Suppression Prefix*, then messages beginning with that string will not be shown in either the Inbox or Outbox. In this way messages intended for another application running on the same device can be hidden from the user, as long as those messages begin with the string configured here.

Voice

The *Voice* tab is described in detail under “Voice – Using the WWAN Phone Dialer” on page 3-74.

Power Mode

The power mode of the modem is controlled through the *Power* menu in the *Control Panel* (not through the Wireless WAN user interface). See “WWAN Power Mode” on page 3-47.

APPENDIX H WIRELESS ZERO CONFIG SETTINGS

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Wireless Statistics H-3
Wireless Information H-4
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Name Server H-6
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Rearranging Preferred Networks H-7
Deleting A Preferred Network H-7
Changing Network Properties H-7

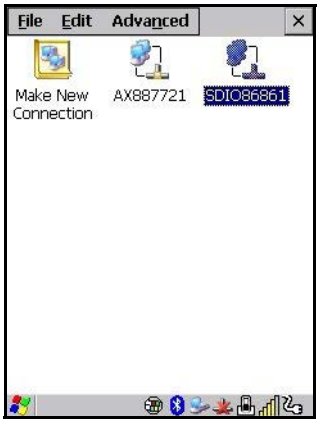
Wireless Information

Wireless Zero Config, the Windows native supplicant, can be used to configure the radio. To ensure that *Wireless Zero Config* is activated, refer to "Wi-Fi Config: Advanced" on page 3-88.

- Tap on **Start>Settings>Network and Dial-up Connections.**

- Choose the **radio icon** representing the radio you want to set up — in the sample screen in Figure H-12 802.11 Wireless LAN Settings Window on page H-3, this is labelled as *SDIO86861*

Figure H-12 *802.11 Wireless LAN Settings Window*



Wireless Statistics

When you choose the **Wireless LAN** icon, an **802.11 Wireless LAN Settings** window is displayed. This tab lists your radio statistics. Choosing the *Zero* button resets the statistics of the last four items — Packets IN, Packets OUT, IN errors and OUT errors.

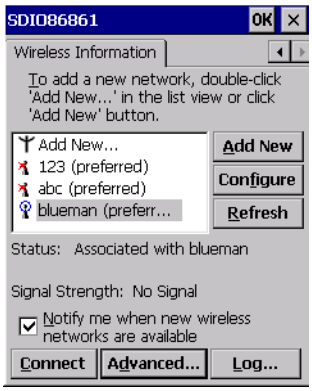
Figure H-13 *Wireless Statistics*

Wireless Information

This tab displays existing networks to which you can connect, and it allows you to add a new network or modify the settings for an existing network.

- **Configure** button: To change the settings in an existing network, highlight the network you want to modify, and tap on the Configure button to display the Wireless Properties dialog box.
- **Connect** button: To force connection to a specific, existing network, highlight the network to which you want the Omnii to connect, and tap on the **Connect** button.

Figure H-14 *Wireless Information*

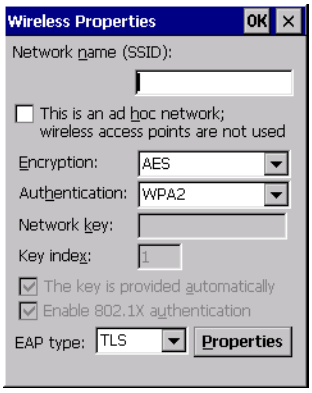


This tab lists available networks — any access points that are broadcasting an SSID, and it lists preferred networks — networks that you have configured. Since access points are generally secure, they will most likely not be listed here. By default, the Omnii attempts to connect to preferred networks. This behaviour can be changed by enabling *Automatically connect to non-preferred networks* in the *Advanced* dialog box (see Figure H-17 Advanced Wireless Settings on page H-7).

- To add a new configuration, tap on the **Add New** button. A blank *Wireless Properties* dialog box is displayed.

Wireless Properties

Figure H-15 *Wireless Properties*



- Type the appropriate SSID (Service Set Identifier) in the **Network name (SSID):** dialog box. The *Network name* field can contain a maximum of 32 characters. The name assigned here is listed as a preferred network.

IMPORTANT Keep in mind that the Omnii will only communicate with access points that are configured with the same SSID.

- **Ad Hoc And Infrastructure:** If you are using an *Infrastructure* network — one in which the hand-helds must pass data through an access point — leave the check box next to *This is an ad hoc network* blank.

  If you are using an *Ad Hoc* network — a network in which the hand-helds pass data directly to other Ad Hoc devices without an access point — add a checkmark in the check box next to *This is an ad hoc network* to enable Ad Hoc.

- **Encryption:** *WEP* (Wired-Equivalent Privacy) encryption prevents others from accidentally accessing your network. If you are not using encryption, you can choose *Disabled* from the drop-down encryption menu. Otherwise, leave this field as is.

  AES (Advanced Encryption Standard) is a standard for protecting data through encryption. AES supports key sizes of 128 bits, 192 bits and 256 bits and will serve as a replacement for the Data Encryption Standard (DES), which has a key size of 56 bits. In addition to the increased security that comes with larger key sizes, the AES algorithm is a symmetrical block cipher that can encrypt (encipher) and decrypt (decipher) information.

- **Authentication:** 802.11 supports several subtypes of network authentication services: *Open, Shared, WPA,* and *WPA-PSK*. Under *Open* authentication, any wireless station can request authentication. The station that needs to authenticate with another wireless station sends an authentication management frame that contains the identity of the sending station. The receiving station then sends back a frame that indicates whether it recognizes the identity of the sending station.

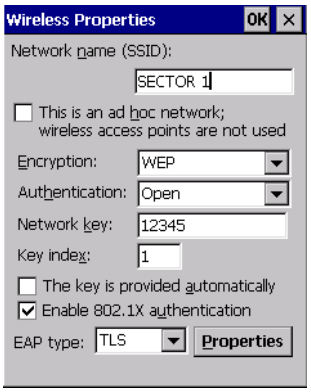
  Under *Shared* authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11 wireless network communications channel.

  Under *WPA* and *WPA-PSK* authentication, the use of 802.1x authentication is required. For wireless networks *without* a Remote Authentication Dial-In User Service (RADIUS) infrastructure, WPA supports the use of a preshared key. For wireless networks *with* a RADIUS infrastructure, Extensible Authentication Protocol (EAP) and RADIUS is supported.

- **Network Key:** This text box is used to specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimal digit sequence that matches the active WEP key on the access point.

  To assign a *Network key*, highlight **The key is provided automatically**, and *uncheck* the check box to disable this option.

Figure H-16 *Network Key and Key Index*



- **Key Index:** This field is used to identify the WEP key.

  Enter a value from **1** to **4**.

- **Enable 802.1x authentication:** *802.1X* is the IEEE standard that offers additional security for local area networks. It provides authentication for user devices attached to an Ethernet network, whether wired or wireless. A security protocol packet such as TLS or MD5 encapsulated in an *EAP* is used in conjunction with the 802.1X standard to authenticate users at the MAC layer. Available EAPs are listed in the drop-down menu next to the *EAP* option.

  To activate 802.1X, highlight **802.1x authentication**, and check the check box.

- **EAP Type (Extensible Authentication Protocol):** This drop-down menu lists the EAP types available on your system. The items in this drop-down menu will vary depending on your network setup. Keep in mind also that some authentication protocols require that you select a Certificate. By selecting the *Properties* button, you will be able to select a *Certificate*. “Compass” on page 3-21 provides a website that outlines how to create certificates for your network.

- **Saving and exiting the radio setup:** Once you’ve completed the configuration, press **[Enter]**, or tap on **OK**.

  The connection you created will be listed in the *Wireless Information* tab as a preferred network. The radio will search for the SSID and compare the WEP and authentication information you specified. If there is a match between the hand-held settings and the access point settings, the hand-held will communicate on the network through the access point.

Assigning An IP Address

If your network is not using a DHCP server, you will need to assign an IP address. Refer to “IP Address” on page 3-86 for details about assigning an IP address.

Name Server

Refer to “Name Server” on page 3-87 for details about this option.

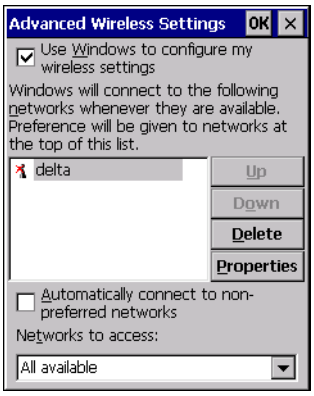
Advanced Features

To display the *Advanced Wireless Settings* dialog box:

- Tap on the **Advanced** button in the *Wireless Information* tab. (Refer to Figure H-14 Wireless Information.)

This window lists the available preferred networks.

Figure H-17 *Advanced Wireless Settings*


Advanced Wireless Settings
OK
Use Windows to configure my wireless settings
Windows will connect to the following networks whenever they are available. Preference will be given to networks at the top of this list.
delta
Up
Down
Delete
Properties
Automatically connect to non-preferred networks
Networks to access:
All available

Rearranging Preferred Networks

The Omnii attempts to connect with the networks listed in this dialog box in sequence, beginning at the top of the list. If you need to rearrange this list of networks — move networks up and down in the list:

- Tap in the *Networks List*, and highlight the **network** that you want to move up or down in the list.
- To move the highlighted item in the list upward or downward, tap on the Up **or Down** button.

Deleting A Preferred Network

To delete a network from this list:

- In the *preferred networks* list, highlight the **network** you want to remove.
- Tap on the **Delete** button.

Changing Network Properties

To change the properties of an existing preferred network:

- Highlight the **network** that you want to modify.
- Tap on the **Properties** button.
- Make any necessary changes in the *Wireless Properties* dialog box, and press **[Enter]** to save the changes.

APPENDIX I OMNII XT15NI NON-INCENDIVE SAFETY GUIDELINES

Omnii XT15ni (non-incendive) Important Safety & Regulatory Information I-3
Omnii XT15ni Battery Information I-4

Omnii XT15ni (non-incendive) Important Safety & Regulatory Information

The Omnii XT15ni (non-incendive) Hand-Held Computer has been qualified by UL LLC to the requirements of the USA and Canada for use in Class I, Division 2-Groups A, B, C and D T6 environments.

The users of this product are cautioned to use accessories and peripherals approved by Motorola. The use of accessories other than those recommended, or changes to this product that are not approved by Motorola, may void the compliance of this product and may result in the loss of the user's authority to operate the equipment.

WARNING **This mark indicates that the user should read all included documentation before use.**

WARNING **Ce marquage indique que l'usager doit, avant l'utilisation, lire toute la documentation incluse.**

WARNING **Explosion Hazard-Substitution of components may impair suitability for Class I, Division 2 locations.**

WARNING **This unit has NO OPERATOR REPLACEABLE PARTS other than the battery pack. Disassembly/assembly of the Omnii XT15ni must be performed by trained Motorola service personnel at a Motorola service depot. No unauthorized substitution of parts is allowed for the Omnii XT15ni hand-held.**

Use ONLY the Motorola Model ST3001-NI battery pack in the Omnii XT15ni. No substitutions are permitted without authorization from Motorola personnel.

DO NOT CHARGE OR CHANGE BATTERIES in an area that is known to be hazardous. Replace batteries in an area known to be non-hazardous.

EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE LAMPS, FUSES OR PLUG-IN MODULES (AS APPLICABLE) UNLESS POWER HAS BEEN DISCONNECTED OR THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS.

EXPLOSION HAZARD. DO NOT DISCONNECT WHILE THE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS.

WARNING **Exposure to some chemicals may degrade the sealing properties of materials used in the following devices: battery packs, housings, LCDs, touchscreens, keypads.**

Replacement of modules, housings, keypads, LCDs or touchscreens, end-caps, pods or external connectors must only be performed at an authorized Motorola service centre.

The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (+212°F) or incinerate. Dispose of used battery packs promptly. Keep away from children.

WARNING **The following additional warnings and cautions must be observed for the safety of the operator and others in potentially hazardous locations:**

The Omnii XT15ni must only be used when the ambient temperature is between -20°C and +50°C (-4°F and +122°F).

The Omnii XT15ni may NOT be connected to any of its available accessories while in potentially hazardous locations. This includes anything that uses the communications docking connector, headset, or microphone jacks. All allowed connections must be made while outside of the potentially hazardous location.

The use of Compact Flash, Secure Digital, and SIM Cards in the Omnii XT15ni while in potentially hazardous locations is permitted as long as these cards are not removed or changed while in the hazardous location.

Any connector cover removed while in ordinary locations must be reinstalled before entering a potentially hazardous location.

Omnii XT15ni Battery Information

The Omnii XT15ni hand-held operates with a specially adapted battery, model number ST3001-NI.

WARNING **The battery pack used in this device may ignite, create a chemical burn hazard, explode, or release toxic materials if mistreated. Do not incinerate, disassemble, or heat above 100°C (212°F). Charge ONLY with Motorola Model ST3001-NI. Do not short circuit; may cause burns. Keep away from children.**

Use ONLY Motorola battery pack Model ST3001-NI. Risk of fire or explosion if incorrect battery pack is used. Promptly dispose of used battery pack according to the instructions.

WARNING **Le block-plies utilisé dans cet appareil peut prendre feu, constituer un risque de brûlure chimique, exploser ou dégager des substances toxiques s'il est manipulé de façon inappropriée. Ne pas jeter au feu, démonter ou chauffer à plus de 100°C (212°F). Ne charger qu'avec les dispositifs Motorola ST3001-NI. Ne pas court-circuiter; cela pourrait causer des brûlures. Garder hors de la portée des enfants.**

N'utiliser que le modèle de bloc-plies Motorola ST3001-NI. L'utilisation d'un mauvais bloc-plies pourrait constituer un risque d'incendie ou d'explosion. Mettre rapidement au rebut tout bloc-plies usé, conformément aux instructions.

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